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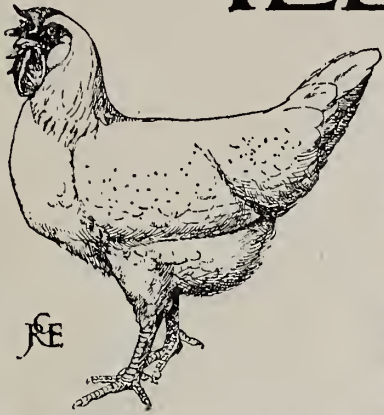
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BLACK ORPINGTONS.

The property of Mr. W. M. Bell, St. Leonards Poultry Farm, Ringwood, Hants.

Among the prizes won by the birds portrayed above are the following: COCKEREL, Challenge Trophy and First at Haywards Heath, and Medal and First at the Dairy; PULLET, Challenge Cup for best bird in the Show, Challenge Cup for the best hen or pullet, two Cups for the best Orpington, and First at Haywards Heath, and Special for the best Orpington and First at the Dairy.

THE ILLUSTRATED POULTRY RECORD



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DIARY OF THE MONTH.

Club Shows.

We are now in the midst of the club show season, and one may pertinently raise the question whether these events quite fulfil the purpose for which they were originally intended. One suspects that in many cases the main idea of the clubs is to make profit from their shows, and it would be by no means difficult to name instances where the proportion of entry fee to prize money is higher at club shows than at such events as the Dairy and Crystal Palace. This is no doubt due to the fact that many of the clubs have but a small credit balance and cannot afford to act generously by their patrons. But this does not alter the fact that at too many club shows the good things provided are obviously for the few lucky ones who own the best birds, whilst the bulk of the entries must come from the less fortunate classes. One may reasonably argue that a club show should be a grand festival in which all the members of a club may participate with some hope of success. Some of the younger Wyandotte clubs have most nearly approached this ideal, for besides open classes for the leading breeders they provide limit classes for those who have never won a first prize at the classic shows, and novice classes for those who have never won a first prize at any show, in addition to limit value or selling classes. Yet even in these instances one would like to see the entry fees considerably reduced, for the extent of these fees keeps away many entries from those who might otherwise be tempted to enter into the spirit of the thing. We venture to believe that the club which first runs its show on popular lines, for the benefit of its members rather than of its own balance-sheet, will score a huge success.

An Essential Inquiry.

At the recent Cold Storage Congress held in Paris the question of eggs came up for consideration. Widely adopted though the preservation of eggs by cold has been, more especially in America, yet the effect, so far as the food value is concerned, is practically unknown. That there is a reason for the rapid deterioration of eggs when taken from the cool chambers is unquestionable, and it is a fit subject for research. We are glad to see, therefore, that the following resolution was adopted by the Congress :

Considering that the egg is an article of food of the first necessity, it is of the utmost importance that the public should obtain eggs which are wholesome and of good flavour, and in view of the fact that the laying time only occupies a part of the year, it has been found absolutely necessary to submit them to various methods of preservation. The Congress, therefore, proposes that in the different countries, principally those which are the greatest producers of eggs, the Departments of Agriculture should institute in their own laboratories, by competent Commissions, tests of the preservation of eggs by cold, these Commissions being empowered to express their opinion on the degrees of perfection attained in this important matter.

It may be hoped that our Department of Agriculture will lead in such an inquiry, which is of supreme importance to Britishers, as we are greater consumers of preserved eggs than any other nation. Or it may be that duty will devolve upon the Board of Trade. Whichever department is responsible, the work should be undertaken at once.

The Point of View.

It is said, but we do not vouch for the statement, that a leading fancier in one of our colonies announced, "We do not want a poultry industry in this country, because the breeding of thousands of good birds

would tend to destroy high prices obtained by the individual fancier who had a reputation." We have heard similar ideas expressed in this country, though perhaps not in so bald a fashion. If this report is correct it is impossible to imagine a more shortsighted and fatuous idea, even for the fancier, who finds, except with the extremely developed exhibition breeds, his greatest custom among those engaged in practical poultry-keeping. It is not too much to say that but for the great growth of the latter during the last two decades exhibition breeders would have lost a vast part of their clientèle. The policy of THE ILLUSTRATED POULTRY RECORD is to exalt the standard of utility poultry and to lead fanciers to pay greater attention to economic qualities. Hence we totally disavow all such statements as that recorded above.

An Interesting Legal Decision.

A case which no doubt will be of considerable interest to many poultry keepers, and especially to those who allow their fowls to have access to the highway, was decided by the Divisional Court on appeal from the County Court. The circumstances of the case were as follow: The plaintiff was riding a bicycle upon the highway, upon the footpath of which were some fowls belonging to the defendant. As the plaintiff came up to the fowls, a dog belonging to some third person frightened them, and one flew against the spokes of the plaintiff's machine, whereby both the plaintiff and his machine were damaged. It was urged on behalf of the plaintiff that the owner of an animal is liable for its trespasses; he keeps it at his peril, and if it escapes from his control and does damage he is liable for the damage which is the natural result of its escape. It was also complained that the fowls caused an obstruction to the right of passage along the highway and that it was an unlawful use of the highway to allow fowls to stray thereon. Counsel on behalf of the defendant was not called upon to argue the point, the court not being convinced by the plaintiff's argument. The judgment of Justices Phillimore and Bray was to the following effect: That even if the fowl was not lawfully on the highway the circumstances under which the accident happened prevented the damage from being the natural consequence of its presence there, and that the plaintiff could not recover. The owner of the fowl was not bound to contemplate such a result as likely to follow from his letting the fowls stray on the highway. The interesting point as to "whether or no a person has a legal right to allow his fowls to stray on the highway" was not seriously argued in this case, and there seems to be at present no authoritative decision on that point. It seems that the business of farming could not be conveniently carried on if such an act were not permissible. Farms are usually situated near a road, and it

seems practically impossible to keep fowls within the limits of such farms.

An Epidemic of Contagious Enteritis.

Contagious enteritis, known also by the name of Klein's enteritis, is just now rather prevalent in epidemic form, and our contemporary, *Poultry*, reported early in November that eastern suburbs of London and the districts in the adjoining part of Essex were the chief infected localities. Since then, judging from recent accounts to hand, there appears to be little improvement and many poultry farms are still suffering much loss. This rapidly fatal poultry malady carries off stock, often at the rate of eight and ten a day, the microbes being disseminated by an affected fowl's excrement soiling food and water that are subsequently ingested. One owner relates the loss of seventy head in less than a week, and we know of others both in the north and south of England who, having imported infection along with the purchase of fowls in some cases from the same source, have lost all or most of the new purchases within a few days of arrival, the disease in one instance accounting for every other bird on the premises. The course of contagious enteritis is very short, from thirty to forty-eight hours being generally sufficient to prove fatal. Sellers of stock should therefore be careful not to supply birds from any yard where the disease has prevailed until a considerable time after its disappearance, while buyers will protect their interests by isolating all newly-purchased stock for at least four or five days after their arrival and, if possible, obtain a warranty from the sellers against this particular disease, an arrangement certainly to the advantage of both parties to the contract. A post-mortem report where the disease has been suspected, and especially when two or more fowls die in rapid succession, will prove a satisfaction and often an economy.

County Poultry Stations.

Among the counties which have made great advances in poultry-keeping during recent years is Wiltshire, where, in spite of the fact that large farms abound, production has increased to an enormous extent, due to the regular instruction provided by the County Education Committee. Considerable interest, and some measure of feeling, has recently been awakened by a proposal to take over a poultry farm near Bradford-on-Avon as a county experimental station. Opposition to the project, chiefly on the ground that such a place would compete in the sale of stock birds and produce with ratepayers engaged in this business, and on the score of expense, has succeeded in defeating the scheme. The details do not concern us here, especially as we have no information other than that appearing in the local newspapers,

but it may be pointed out that the competition feared would be infinitesimal and far more than compensated by the benefit accruing to the county from improved stock, of which abundance of evidence was submitted to the committee, and educationally; whilst, on the other hand, the cost was shown to be practically nil, at any rate to the ratepayers of the county. Even if that had not been the case, considering the amount received from the "whisky money," a very small portion of that would have abundantly provided the means for supporting such a station. It is evident that the question was decided not on its actual merits, but from a fear of municipal trading, so-called. The need for experimental work in poultry-keeping is so evident and the benefits accruing therefrom so great, that establishments of this nature must come if we are to make further progress. Britain is far behind in this respect, and we regret that Wilts has not accepted what appeared to be a favourable opportunity for leading the way.

The Coloration of Birds.

Artificial selection has had considerable influence in fixing the feather coloration of many of our leading varieties of poultry, but it does not solve the entire problem. In fact, such selection in the majority of cases is based upon natural changes. This question is practically virgin ground for investigation. Many breeders have asked why the Spanish fowls are largely black in plumage; why whites have predominated in Italy; why upon some breeds spangles appear and others are speckled. In the last named the protective influence may afford a partial explanation, but that does not appear to be the reason in Spain and Italy. Hence a report which has recently appeared of experiments conducted by Mr. C. W. Beeby, of the New York Zoological Society's garden, with a view to elucidation of this question, is valuable in the extreme. That gentleman has found that a warm, moist atmosphere tends to darkening of the feather coloration. It may be hoped that these observations will be continued. A Russian idea is that in countries where the days are hot and the nights cold the black pigment keeps the birds warmer at night, and that would offer a probable reason for the preference on the table lands of Spain for black fowls.

Pre-Natal Influences.

The question raised by Mr. A. T. Johnson in his article on "Sight in Breeding" has often been discussed, but while pre-natal influences are believed in very widely we have no actual data upon which to dogmatise. Doubtless, the story told in the Book of Genesis with regard to Jacob and the ring-straked cattle is responsible for this belief. As Professor Eugene Davenport says in his work on the

"Principles of Breeding," "marks and deformities of all sorts are popularly attributed to unfortunate sights and experiences of the mother before the birth of the young. . . . The hold of this theory upon the popular mind is the best example afforded by breeding of the strength of tradition. The supposed reason on which it rests has slight basis in fact." And the same author further says: "Mothers are subjected to all sorts of sights, sounds, and experiences during the many weeks of embryonic development, and it would be strange indeed, if, out of the thousands of cases some correspondence between marks and experience could not be figured out, especially by one whose belief is fixed, and who having the case at hand, needs only to find the proper 'corresponding experience.' The law of chance alone will insure an occasional correspondence between the two—entirely enough to start the tradition and to maintain it afterward." At the same time it is fair to state that there are cases which can hardly be explained by the law of chance, though the great majority of variations put down to sight influences are simply due to atavism.

Co-operators, Awake!

In spite of the efforts made to extend the co-operative marketing of eggs and poultry in this country, and successful though many of the depots established for this purpose have been in improvement of the quality of produce and enhancement of returns obtained by poultry-keepers, the number of such organisations is infinitesimal as compared with the opportunities. Street and Wilton and Framlingham and others we know as having rendered great service in their respective districts, but the sum total is a very small part of what might be. In Ireland and Denmark the growth of these local co-operative societies has been much greater. Perhaps to some extent an explanation is to be found in the fact that Britain is a consuming country, whilst Ireland and Denmark are producing countries. Yet that does not explain why in many counties of England and Wales and in the greater part of Scotland co-operative egg and poultry societies do not cover the land. In the last number of the *Journal of the National Poultry Organisation Society* is an account of the depot at Wickham Market in Suffolk, which we commend to the notice of existing distributive co-operative societies throughout the country. Here the Wickham Market Industrial Co-operative Society has employed its carts used in delivering groceries, &c., to its members, for the collection of eggs, so that on their journeys, instead of returning empty, they come back laden, to the benefit of members and the society alike. Business was commenced on January 1, 1906, yet in the following year, 1907, nearly half a million eggs were handled.

THE ORPINGTON.

I.—AS A UTILITY FOWL.

By EDWARD BROWN, F.L.S.

POPULARITY is a fickle jade, with hens as with humans. The fact of a race of poultry attaining a large measure of public favour for a time is no proof of its virtues. Breeds rise and fall in general estimation without any apparent reason. Some are boomed into prominence, ascending with meteoric brilliancy, and, after a shower of pyrotechnics, disappear, coming down like the proverbial stick. Others have to fight for their recognition at first, and only succeed when they have proved their merits. Yet more are slow in winning a place, but hold it for a considerable period when secured, ultimately descending into semi-oblivion with slow and graceful steps. A few appear to withstand both prosperity and adversity, reasserting themselves again and yet again. All, however, serve a purpose—if we can but recognise it—contributing their share to the progression of the poultry industry. The final court of appeal with respect to any breed is not its beauty or its coloration, but the practical nature of its qualities. Otherwise the popularity attained is limited or evanescent.

Many, nay most, breeds have suffered more from their supporters than their critics. "Save me from my friends" may be the cry of fowls of all grades. Some years ago, when writing to an American friend, I said that "if we believed everything claimed for the Orpington we should expect to find it the only breed on the Plains of Heaven—if fowls are to be found there." This was not stated with any desire to minimise the economic qualities of the race, which are great, but to show that exaggeration is met with even where it is least needed. And certainly no breed has required such exuberant advocacy less than the one under review. Its sterling merits have been widely recognised, more in one variety than in others. They speak for themselves, which is ever the best form of advertisement. Idealism is necessary, we suppose, for progress. We like to hug our vain conceits. But when those who are less blinded by personal predilection or interest humbly venture to point out that there *may be* weaknesses which we had omitted

to notice, surely these gentle souls should not be regarded and attacked as if they were minions of the Evil One. I can say this with respect to the Orpington, a race for which so much that is favourable can be stated, in the hope that even if the conclusions arrived at may not be entirely and completely favourable, I may receive a measure of absolution.

For the purpose of the present review it will be necessary to confine our attention to three varieties, namely, the Black, the Buff, and the White. The others, whose number I am frankly uncertain about, are at present purely exhibition stock and have yet to prove their economic value. However much fanciers may wish to multiply varieties, utility poultry breeders are well advised to abstain from speculations of that kind. Hence I do not propose to burden these remarks with details of no real value. "Handsome is as handsome does," and we are specially interested in the "does" side of things. If the exhibitor will kindly improve these sub-varieties on practical lines we shall be glad; but we want to know as soon as he has done so, and before he has had time to ruin them by undue exaltation of arbitrary and useless points. Probably they may never be of any real service, in which case we are content to leave them to him entirely until the crack of doom.

Taking the last three of the varieties named first, by reason of the fact that there is least to be said respecting it, as it has yet to prove its value fully, up to the present it has not been adopted widely. A few breeders have introduced it, but hitherto it has been mainly in the hands of specialist breeders or exhibitors. Last year, when in Denmark, I was interested to find that at a breeding centre in that country the White Orpington was exclusively kept and was being distributed with the object of securing tinted shelled eggs and improving winter laying, both of which had been achieved. On that side it is more than probable that the White Orpington will prove of great service, although it has fairly good table properties. Like the Blacks, it is heavier in bone than the Buffs, and consequently takes longer in attainment of a killing condition, whilst the structure of body indicates more thigh development than is desirable in a first-class table fowl. Hence, in spite of its white legs, flesh, and skin, the Danes appear to be right in regarding the flesh qualities of this

variety as of less importance than its productiveness as a layer.

For the spring chicken trade it is less serviceable than as a well grown winter fowl. At the Danish Breeding Centre of Sejling, as recorded in my "Report on the Poultry Industry in Denmark and Sweden," a flock of White Orpington hens averaged 74 eggs from November 1, 1906, to March 3, 1907, that is in four months. There was considerable variation in the laying, varying from 93 to 210 in the twelve months. But, the Report states, "out of 46 hens trap-nested, five produced less than 120 eggs and nine less than 130, so that the average was good." The eggs are excellent in size and nicely, though not deeply, tinted. My own judgment is that breeders will be well advised to pay special attention to the development of egg production in this variety, even though the flesh properties are sacrificed to some extent, rather than attempt to run both together, as I do not anticipate that it will ever be of much service as a table breed. It is in the direction named that the greater profit will be obtained.

The first of the Orpington family was the Black, introduced twenty-two years ago, the popularity of which grew very rapidly indeed. There can be no question that they met admirably a need arising from the great extension about that period of poultry-keeping in suburban and manufacturing districts, where a dark plumaged fowl is almost a necessity, and where a bird of quiet disposition, willing to submit itself to a restricted environment, yet vigorous and economically profitable, is sure to command a large amount of favour. For such conditions the general purpose type of fowl was more suitable than the non-sitters. Some of the older races of this class were losing vigour, and the Black Orpington "filled the bill." It is a large fowl, hardy, a good winter layer, but not very prolific, the eggs having a moderate tint of shell. It is somewhat heavy in bone and, therefore, rather slow in growth, but this, if not an actual recommendation, was no disadvantage under the conditions named, and to many poultry keepers the uniformity of colour was a decided gain. It has been claimed that this variety is a first-class table fowl, but that cannot be conceded. That it is fairly good may be freely acknowledged. The meat is too much upon the thighs to take the highest place, and as it is grey rather than white in flesh and skin, it can never hope to attain the supreme rank. The flesh is abundant, however, and well flavoured. Signs are evident that the Black Orpington has largely accomplished its purpose, and under suburban and other like conditions, where all-round qualities are desired, it may be safely recommended.

Probably the most popular variety of fowl is the Buff Orpington, in spite of the fact that it does not

equal the White Leghorn or the White Wyandotte as an egg producer, or the Sussex, the Bresse, or the Dorking for its table properties. Nor is it on the exhibition side that its reputation is wholly built, though in that respect it occupies a leading position in this country. What, then, may be asked, is the explanation? To which we may answer that it is the combination of qualities and its adaptability that account for the unique position held by the variety. The fact cannot be gainsaid that at home and abroad it has deservedly won the place now occupied by it. Throughout the United Kingdom practical poultry keepers have adopted it to a very large extent. During my visits to Hungary in 1902 and 1904 I found that it was extensively bred, and that the agricultural authorities in that country were advocating its dissemination as the breed specially suitable to meet the growing trade for eggs and chickens. Two years ago I found it had been received with marked favour in Canada and it is making its way slowly, but steadily, in the United States. The same was seen to be the case in Sweden last year, and this season hundreds of Buff Orpingtons have been distributed in the Province of Scania by the Agricultural Society in that country. We know, also, that large numbers have been exported to the colonies and foreign countries. The secret is found in the combination of white flesh and legs and the production of tinted shelled eggs met with in very few races. It is a fairly good layer, especially in winter, and is certainly good in meat qualities, whilst its quiet temperament makes it easily restrained. Moreover the considerable infusion of yellow blood which it embodies enables it to be kept upon heavy soils where other white-fleshed races would not thrive, even though the lighter soils are more favourable for obtaining the best results.

One great advantage which the Buff Orpington possesses over other members of the same family is in the distribution of the flesh found thereon. Light in bone, it does not carry so much muscle upon the thighs and the flesh is exceedingly well developed on the sternum, whilst that flesh is white and cobby. In length of body it cannot equal some other breeds, but the plump and well-filled skin gives it a pleasing appearance. We have not found this breed a rapid grower, in which respect, however, it is better than many of the heavy breeds. The eggs are a little small, and here improvement ought to be secured. I am convinced, however, that breeders should pay most attention to the table qualities of the Buffs, and by striving to maintain lightness of bone, to keep the wings large, and thus tend to improve the breast qualities, retain and extend the qualities which have made it popular. Plumage coloration is of very secondary importance.

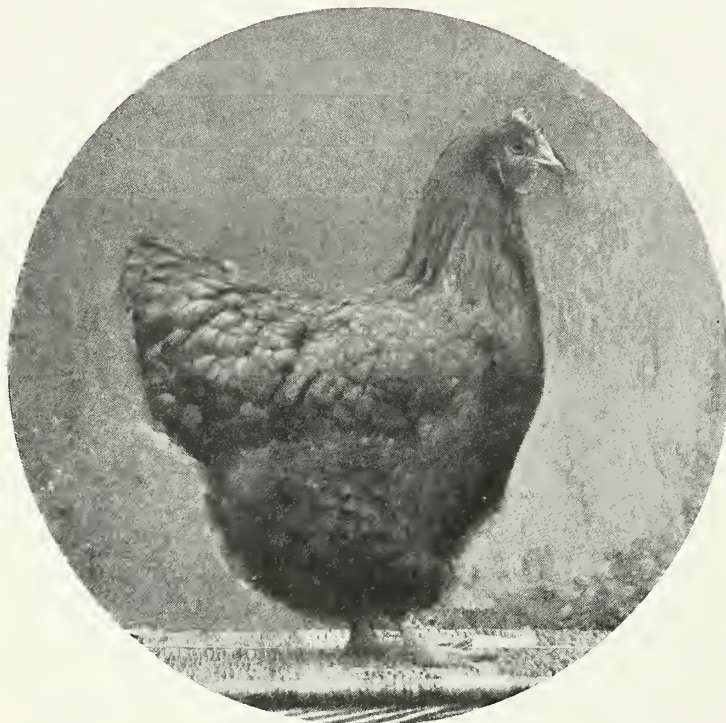
2.—AS A FANCY FOWL.

(a) THE BLACK.

By W. M. BELL.

ORIGINATED some twenty years ago, the Black Orpington has maintained a steady popularity as an exhibition fowl. The reason of this is not far to seek, for it is (1) a very handsome bird, (2) easy to prepare for exhibition; and (3) no double mating is required, equally good birds of either sex being produced from the same pen. The late Mr. W. Cook, who originated the breed, is stated to have used a cross between a Minorca cock and black sports from Plymouth Rocks, mating the progeny back to clean-legged Langshan cockerels. However this may be, the result has been a short-legged, deep-bodied bird with brilliant sheen and broad, full front.

Taking the three main characteristics to aim for in the breeding of Black Orpingtons as shortness of leg, colour, and, most important of all, type, I will first speak as to shortness of leg. Occasionally we see birds penned, that almost touch the ground, so short



Black Orpington Pullet.

Copyright.

are they, and, although we want short-legged birds, this is rather overstretching the mark. Being full-bodied fowls, they must have a certain amount of daylight under them to show off the full effect of their body type. Birds that are as short in leg as I speak of very seldom attain a good size, and an Orpington must have size. The colour should be a brilliant beetle-green sheen, free from purple or bronze, and one of the chief aims in breeding is to get this colour not only on the top, but carried right down the breast

into the fluff. At the present time there are very few birds that can show a really good colour throughout. In type they should have a broad, full front, showing an unbroken curve from the beak to the tail. Many birds have a tendency towards being pinched in the breast, and one of the main objects in breeding is to get this perfect curve. The body should be deep through, as it is no use having a broad, full-fronted bird if it has not the depth of body to set it off. The back should be short, with broad shoulders, with the saddle rising in a gentle sweep up to a neat, flowing tail. The saddle itself should be broad, with a full hackle. The comb should be fine, evenly serrated, and free from side sprigs. It should be of medium size, set on a firm base. If too small, it makes the cock look effeminate; but, on the other hand, a comb like a Minorca's tends to lessen the compact appearance of the bird.

The eye is an important point, and its colour is sometimes the subject of controversy. I have often heard people talking of a jet black eye but have never seen one yet. However good a bird's eye may be, if held in the light it will show a dark brown iris with black centre. This is what the standard requires.

In the mating of Black Orpingtons I am never particular as to the size of the male. In fact I would prefer a small bird, if he is of really typical shape. The female should be as large as possible, provided she is a fairly good type and other small points are good. In both cases they should have good bone and should stand on short legs, this applying more especially to the male. Never mate two very highly coloured birds together, as by doing so one is liable to get purple barring on the wing, or a bronze colour, either of which goes against a bird in the show pen.

I have mentioned double mating as not being necessary for this variety. For the amateur who only keeps one pen this is a great consideration. I have known a case of a cockerel winning at the Dairy Show and a pullet getting second on the same day, both birds being hatched on the same day and bred from the same father and mother.

In conclusion, the perfect bird has not been produced yet, but should this happy consummation of the breeder's wish be obtained, it will be difficult for any man to produce a more perfect picture of the feathered tribe than a Black Orpington.

(b) THE BUFF.

By W. RICHARDSON.

THE Buff Orpington is no doubt one of the most popular fowls of the day, from a Fancy as well as a Utility standpoint; and few people who have kept the variety would care to part with it for any



BUFF ORPINGTONS.

[Copyright.]

The property of Mr. J. Turner, Bentham Poultry Yards, Bentham, Yorks.

Among the prizes won by birds bred at the Bentham Yards are : Challenge Cup and First Crystal Palace (1906), Cup, First and Second, Birmingham (1907), First and Second Pullets and First Cockerel, Royal (1907), and First and Second Pullets, Royal (1908), Club Special and First at Manchester for three years, and Firsts at Lancaster, Bolton, Royal Lancashire, Morecambe, and other shows, while this year Mr. Turner's Buifs have three times won the Cup for best bird.

other ; the fowls are hardy and handsome, as well as being good layers and table birds. I have been asked to review the variety from a Fancy aspect, and I do so with great pleasure, since I have kept the breed almost from the time it was first introduced. There is no doubt that the Buff Orpington is of much longer standing than we are led to suppose, and that it is quite distinct from the so-called Lincolnshire Buff, which is, in my opinion, nothing more than the descendant of the original Buff Cochin.

When I took up Buff Orpingtons there was so much controversy as to their origin that I determined to find out all I could about them. With that object in view I visited all parts of the country in which they were bred ; and from what I gathered from reliable people it was evident that they had been in Lincolnshire for many years and were produced from three breeds. In the first place Dorking pullets were mated with Cochin cockerels, and after several generations the female progeny of these cross-bred birds (Cochin-Dorkings) were mated with Gold Hamburg cockerels, to improve their laying properties. I was told that they had been bred to a uniform type for close upon twenty years ere they were introduced to the Fancy ; and every one I met who kept Lincolnshire Buffs was most positive that the Buff Orpington and the Lincolnshire Buff were two distinct races. And I must admit, after seeing numerous flocks of each breed, that I could form no other conclusion ; any one could see a vast difference between them.

I began exhibiting Buff Orpingtons in 1897 at the Dairy Show, and I have had some birds in the classes every year since, with the exception of one occasion when I had the pleasure of judging them. I have seen the classes grow from very small ones to the largest in the show, which has been the case at all exhibitions where classes were provided for them. What strikes me most year after year is the tendency of breeders, and the Fancy generally, to prefer birds of lighter shades every season. Many of the first cockerels shown were of a rich mahogany colour, and the pullets were light fawn-coloured birds, with much darker necks and dusky flights and tails. Now what is required in the cockerels is rich, even golden, buff from head to tail, free from redness or "brassiness," with pure buff tails and flights. The pullets should be of a soft, level, and medium buff all through, of a colour to match the cockerels' breasts. They must also be of true type, low set and cobby, although I do not like to see them verging on the Dorking shape, as some undoubtedly do. I like specimens of uniform appearance, which do not look either tall or short, but of a symmetrical appearance.

There is no doubt that Buff Orpingtons breed much more true to colour and type than they did a few

years since. I find in my chickens a very small percentage of real "culls," which shows that careful selection and mating year after year with a set object in view, and line-breeding the same strain, brings the variety to perfection much sooner than buying good-looking specimens haphazardly and expecting to produce better ones next year. This is a great mistake for a beginner ; and I have known several fanciers who tried it and after two or three years give the breed up in disgust. Others, however, who have persevered on the lines I mention continue to breed many good birds each season, so that now it is not easy to place a strong class of Buffs, as there are so many specimens of almost equal merit.

The chief points to breed for in Buff Orpingtons are uniformity of colour and shape. The birds should stand on short, straight, white legs, free from feather. The comb should be neat, medium, and single, and free from sidespikes, the earlobes red, and the eyes a bright orange. The colour should be buff throughout, showing no white in the plumage either on the surface or underneath, and as little dark in flights and tails as possible. The cockerels should be free from light or dark lacing on their breasts also mealiness, which is not quite so easily detected in the cockerels as in the pullets. Mealiness, however, is one of the greatest faults in pullets, and many fanciers do not appear to notice it, although to a practised eye it is clearly discernible.

These notes on the variety are of necessity brief ; but I hope they will prove interesting to all lovers of a breed of fowls which, from my experience (and I have kept many kinds at different times), combines as many nearly perfect Fancy and Utility points as we are likely to find. I may add that although I have bred my birds entirely from a Fancy standpoint, I find them improve in laying and table qualities every year, and although they are line bred they are perfectly strong and vigorous.

(c) THE WHITE AND OTHER VARIETIES.

By W. W. BROOMHEAD.

IT has always been a matter of conjecture as to how the White Orpington was "manufactured" ; and it is still a much-debated point as to who actually brought it out. The late Mr. William Cook, who originated the Orpington fowl, claimed the honour of producing the White ; and he stated that the variety was the result of Black Hamburg hens mated with White Leghorn cocks, and their offspring eventually crossed with White Dorkings. The first specimens bearing the name—and I refer to those produced in 1889—were, however, of a slim build and too closely

resembled fowls of the non-sitting type. They did not, as a matter of fact, conform to the type of the original Orpingtons, the Blacks, which came into existence about two and a half years prior to the date mentioned. And, moreover, whereas the Blacks were single-combed, these first Whites had rose combs.

But there are other fanciers who contend that they originated the White; and, in one instance at least, in a much more simple manner—namely, from sports from the Buff. And I greatly question if there are many, if any, strains of White Orpingtons among

revival came in 1899, during which year the Albion fowl was being boomed. This new fowl, it was stated, was a pure Sussex breed, produced solely from the existing Sussex poultry, which at that time were nothing better, as regards external points, than farmyard fowls. However, the Albion greatly resembled the true Orpington type; hence after a season or so the Albion disappeared from the list of pure breeds and the White Orpington came to the front.

For a brief period it flourished; but once again it dropped into obscurity. At the time there existed a great prejudice against white plumaged fowls of any breed. They were supposed to be delicate, and, on the other hand, it was considered a trouble to keep their plumage in a fit state for the show pen. But what the White Orpington lacked was a club to look after its interests. This, however, it obtained in 1903, when the Variety Orpington Club was formed at the Crystal Palace Show, and since that time it has gone ahead in a satisfactory manner. And it became such a favourite that in 1905 breeders of the variety were numerous enough to form the White Orpington Club.

That it is now a popular variety is beyond dispute, and at the recent club show at the Palace there were some two hundred entries in the eight classes. As regards its exhibition points there is not much to be said. We all know that a white bird should be white, but it is a great mistake to sacrifice other points for colour. I like a good white plumage, but in my opinion type and general characteristics are much more preferable, and until true shape and the desired size are firmly fixed it is folly to let the colour faddist have full swing.

The quality of the specimens at the recent club show was certainly an improvement on last year's display; but even now there are too few really typical Whites about. The pullets, as regards shape, are better than the cockerels, which in many respects resemble Plymouth Rocks. But an adult Orpington, no matter of what variety, should not show its thighs. Then again, in the females, there is room for improvement. Some strains, too, often show blue coloured shanks; but white legs are required.

As a fancier's fowl, however, the White Orpington is gaining rapidly in popularity; and since it retains its utility points, being a very good all-round fowl, it is being much sought after by those poultry keepers who do not aim at keeping exhibition specimens. It is certainly not a variety to be kept in a busy manufacturing district, since nothing looks worse than a dirty plumaged white fowl of any breed; but for a country neighbourhood which is free from smoke the White Orpington will be found to meet all the requirements for utility purposes. The eggs are large and brown shelled and the chickens can be well fed for table.



White Orpington Pullet.

[Copyright.]

those which are to the front at the present day in the exhibition arena which have been other than Buff bred. Some authorities, I am aware, hold different opinions; but even now it is by no means rare to find traces of the Buff ancestors in some show specimens.

Although, as I say, the White made its *début* in 1889, it was rarely met with for some years after that date; and I believe that had it not been for an attempt to boom another new breed the White Orpington would have been practically unknown in the Fancy for much longer than it was. Its first

The best known of the "other varieties" of the Orpington fowl are the Jubilee and the Spangled. The whole list may be said to include the Cuckoo and the Blue; and even a Partridge and a Buff laced or White-laced Buff have been attempted and actually exhibited during the past few months, while there has been some talk of bringing out yet another, a light or Columbian—in fact, this last variety is well in hand! It will be sufficient, however, for the present contribution to deal with the two first-mentioned varieties. There cannot be any doubt that the more recent introductions leave much to be desired. They resemble their names in colour only, and that weakly, while they are far from the true type which is necessary to make the Orpington distinct from other breeds of the sitting class. It should be remembered that type makes the breed and colour the variety.

The Diamond Jubilee, to give it its full title, was introduced during the sixtieth year of the reign of the late Queen Victoria—hence its name. Nevertheless, its original cognomen was not a pleasing one in the Fancy, consequently the variety has for some years been known simply as the Jubilee, which name, it must be admitted, is awkward enough. There is much in a name when it is applied to a race of fowls, and I am firmly convinced that the very name Jubilee has tended in no small measure to prevent the variety becoming as popular as its good qualities merit. It is a difficult title for the public to grasp; and, moreover, it does not convey the slightest notion as to the colour. Had it been christened the spangled, or even the speckled, it would undoubtedly have had a much greater vogue, since it is a really handsome fowl, and one which will provide the true fancier with ample scope for his talents.

For some years after its introduction the Jubilee was practically unknown to the general fancier, and it was not much exhibited until the Variety Orpington Club was started in 1903. It was said to have been extensively bred prior to the latter year; but this is very questionable—if the extensive breeding refers to the variety under its new name. As a matter of fact, the early specimens exhibited as Diamond Jubilee Orpingtons greatly resembled a somewhat nondescript race of fowl which was common in the old days in the south-eastern counties of England and which has recently been evolved into the Speckled Sussex. To put it into plainer language, the Jubilee is merely an "improvement"—if I may be permitted to use the word without in any way wishing to disparage the beauties of our ancient races of poultry—of the speckled farmyard fowl indigenous to the county of Sussex. And to-day, since the Sussex Poultry Club has taken its own breed in hand for exhibition purposes, it is very

difficult for the general public—aye, and the ordinary poultry fancier—to distinguish between the two varieties.

As has been stated, its name does not give one any idea as to the colours of the Jubilee; it is a parti-coloured variety. The ideal aims at a combination of black, white, and mahogany—bright mahogany, not a dark or maroon shade. The cock's neck and saddle hackles, back and wing bows, should be of the desired mahogany shade, with black centre striping and a white tip to each feather. The wing bars should be black, the secondaries and flights of the three colours, the sickles and true tail feathers white, or black and white, or of the three colours, the coverts black edged with mahogany and tipped with white. The remainder of the plumage is mahogany with black spangles and white tips, the three colours showing in equal proportions, avoiding a ticked effect on the one hand and a blotchy effect on the other. The hen is of similar colours, allowing for the usual sexual differences. The standard notwithstanding, it is a great mistake to insist on the equality of the three colours in the hen and on the cock's breast, since it has a decided blotchy effect.

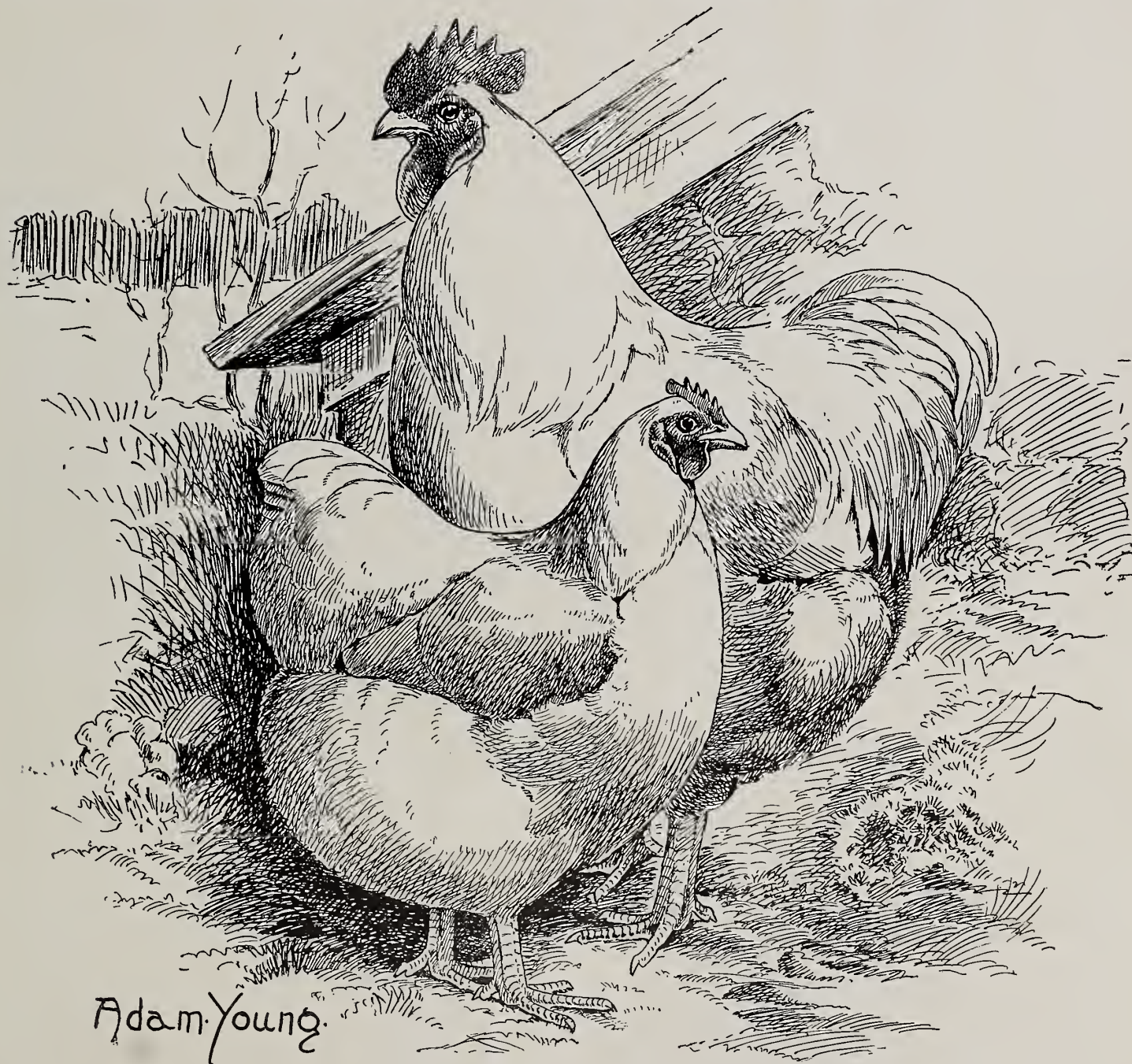
The Spangled Orpington is, comparatively, of recent introduction. It is said to have been brought out in 1900; but it does not appear to have been exhibited before the end of 1902. Until about three years since, however, there was not much competition in the variety; in fact, so far as it has been possible to trace, it was practically confined to the firm which was booming it. I got my first glimpse of the Spangled during the summer of 1901, when I paid a visit to Messrs. W. Cook and Sons at Orpington House; but the variety did not impress me as being one likely to become very popular in this country. It was produced solely for utility purposes and to meet a demand which existed in the Colonies for a race of fowls with plumage similar to that of the Houdan but minus the top-knot or crest. It was certainly a mottled variety as I first recollect it; so much so that in my opinion a good name for it would have been the "mottled."

The plumage of the Spangled is a black and white. The cock's neck and saddle hackles, breast, tail and wing bows should be black ticked or tipped with white, the wing bars black, and the secondaries and flights black and white. His breast should be of both colours showing in equal proportions; and the same description answers for the hen. Here again the standard demands equality of black and white, avoiding a ticked effect on the one hand and a blotchy effect on the other. But such markings are not the best. It is much more desirable to have a small white spangle on each feather than to have equal proportions of both black and white. Such birds as the latter, especially if

young ones, are almost certain to become practically white when they get through their first adult moult. Moreover, the smaller spangling is in keeping with the feather markings of other breeds of a similar character, such as Houdans and Anconas.

From an exhibition standpoint the variety is making very satisfactory headway; and during the season which is now closing there have been some very typical Spangles penned at one or two of the classical events—birds which lacked nothing as regards true Orpington characteristics, and were of sound

colours, the black with a bright green sheen, and the white pure and free from any black ticks. Size is still somewhat lacking, compared with that of the Blacks; and with many strains it appears to be difficult to get a good black under-colour, and thus the neck hackles particularly have a tendency to be streaked with white instead of being tipped. The desired mottled legs, too, have not been seen on many birds which have been exhibited; there is too great a tendency for the shanks to be of a self colour, either white or black, although the latter is decidedly preferable in the absence of mottling.



WHITE ORPINGTONS.

[Copyright.]

The property of Mr. W. Richardson, Buff Orpington Poultry Farm, Northlands, Horsham.

The Cockerel represented above has won, among other prizes, First at Tunbridge Wells, Challenge Cup for the best cock or cockerel in the show, Poultry Club, Sussex (county), Cup and First at Haywards Heath, and Second at the Dairy, while the pullet secured Special and First at Tunbridge Wells, and Thirds at Haywards Heath and the Dairy.

FOX-HUNTING AND POULTRY-KEEPING.

An Inquiry into the Facts.

By "HOME COUNTIES."

Author of "Poultry Farming: Some Facts and Some Conclusions," "The Townsman's Farm," &c.

From the many reports which have come to hand from various parts of the country a favourable opinion as to the number of foxes can be safely formed.

Indeed, whereas some two or three years ago many of the reports forwarded to us spoke of shortage of the raw material, and were pessimistic in character, the reverse is certainly the case this autumn, and in the hundreds of returns which have come to hand there is hardly a mention of poor supplies. There is, in fact, a remarkable all-round improvement.

We may state with confidence that fox-hunting was never so popular as it is just now, that more people indulge in it, and a greater sum of money (in the aggregate) is spent on it every year. Moreover, it is in many places conducted in much more business-like fashion than it used to be.—*Field*, October 17, 1908.

EARLY one morning in July I was in the house of a farmer in the South of England. He and his wife are good-natured and easy going, and they go to chapel on Sunday. But on the occasion of my visit the farmer was in a high state of indignation and his wife was in tears.

Outside the back door were lying sixteen fine early-hatched pullets, which, if they had not been killed by a fox, would have been among the early layers of last month and this.

"Compensation be hanged," said the agriculturist, when I tried him with the stock form of consolation in such cases. "It makes a man wild to see such waste; and all the wife's care and trouble to get her birds forward go for nothing. I guess it's one of those bought foxes, too, as likely as not."

"What's the good of compensation?" asked his spouse. "Where am I to get early layers from? Nobody's going to part with theirs. Not likely. And where shall I be by Christmas with my customers that I have agreed to supply so many eggs every week to?"

A few weeks ago I was in the north-east of Scotland, where agriculture is practised with rare skill, as all the world knows, and walked over a farm with the holder. He did not take his gun with him, but did mention that sometimes he had a bit of shooting. He added, casually, "The other morning I knocked over a fox!" And evidently he did not expect me to be any more surprised than if he had remarked that he preferred the *Aberdeen Free Press* to the *Scotsman*. He and the neighbouring farmers thought no more of the shooting of a fox than they would of the killing of a stoat.

These two stories illustrate very clearly that the position occupied by the fox is by no means the same all over the country. To my Scots farmer friend I told the incident at the farmhouse south of the Thames. "Oh, that kind of thing would never do at all up here," he said.

I added that I once had an Aylesbury drake which was bigger framed than any bird I had ever seen

before or since, and of a fine type; that he sometimes took his ducks down the stream a meadow or two beyond my land; and that one day, when he was missed, I went in search of him, only to come upon a lot of feathers and perhaps three pounds weight all told of his body. "What did I do?" I was asked. "Didn't I put in a claim for compensation?" "No," I said, "I did not." What was the use? I should not have parted with the bird for half a sovereign, and the Hunt would probably have offered me, "say, half a crown for an old bird." Unlike some of my poultry-keeping friends, I do not hunt, so I could not debit my loss to my sport. But I own I should have liked to debit my chagrin to something.

* * * *

That foxes are getting fewer in this country there does not seem to be any reason to believe. The extract from a leading article in the *Field*—than which, obviously, there could not be a more trustworthy authority—speaks for itself.

In a leading weekly review, the *Nation*, of the same date as the issue of the *Field* from which I have quoted, I see that a natural history writer throws some light on the importation of foxes "from Scotland or from Germany, Austria, Sardinia, and Siberia."

Responsible authorities to whom we have applied have estimated that the trade in foxes runs into thousands a year. But people who stood very well the over-nursing of indigenous foxes will be struck by the extreme illogicality of its latter development, and become silent objectors, secret hinderers, even vulpicides.

It is not everybody who understands to what extent England is still hunted for foxes. "Whitaker" contains only the names of the better-known packs. There are in reality more than 160 foxhound packs in England and Wales. These packs number more than 6,000 couples of hounds. In Scotland the packs contain some 370 couples or so. In Ireland the number is more than double the Scots figure. Of the English packs, more than fifty are credited in the *Field's* annual list of hounds with not fewer than fifty couples of hounds apiece. And a perusal of the reports which appear week by week in the *Field*

and other journals giving space to hunting reports makes it plain that the Hunts have little difficulty in finding sport.

* * * * *

If the question of the relation of fox-hunting to poultry-keeping is an important one at present, how will the subject stand in the future if the hopes of the National Poultry Organisation Society, the Utility Poultry Club, and the Board of Agriculture, and the friends of the small holdings movement generally, should be realised, and a substantial increase in the English poultry population should take place?

It seems well worth while that the facts of the case should be carefully examined. On the suggestion of the Editor of this magazine I have been endeavouring to examine them. I have taken the trouble to write a note to the Masters of sixty representative Hunts, enclosing a printed copy of the questions set out below.

I ought to explain that I found it too much of a *corvée* to communicate with the remaining hundred Hunts, but I do not suppose that anyone has any reason to doubt that the replies I have received are typical of those I should have had had I written to every Master in the kingdom.

The questions were as follows:

1. Is poultry-keeping increasing in your country?
2. What compensation to poultry keepers do you usually pay per head for (a) young marketable pure-bred birds; (b) other stock?
3. What is the total sum which poultry claims cost you per annum?
4. Without making any allegations against the poultry keepers of your country as a class, do you think you are victimised in the matter of claims? If so, to what per cent.?
5. What is about the area of your country in square miles, and how many foxes do you suppose there are in it?
6. The poultry keepers' point of view is that it is essential to profitable poultry-keeping by agriculturists that the birds shall be scattered about the farms over as wide an area as possible; that to fasten up the houses in all the fields every night and to open them at daybreak means a great deal of labour, and in summer the birds are deprived of the "early worm," while, where foxes are about, early opening of the houses is risky; that commercial poultry-keeping on farms is impossible in pens; and that the compensation paid by Hunts is sometimes inadequate.
7. In view of the probability of an increase in poultry-keeping in this country, what is your personal view of the question of fox-hunting and poultry-keeping?

These questions about covered the ground, I thought. But it was suggested to me afterwards that they did not! I suddenly remembered that an excellent friend of mine, who spends not a little time and money in promoting practical poultry-keeping, was a great hunting man. So I wrote to him. Here is his reply:

As I have been spending a month cub-hunting with the Cottesmore and Belvoir, your letter arouses

interest. I am very glad that you have taken up this job, as I feel that you are likely to look at the question more impartially than the majority of poultry keepers. I wish, however, that before making out your heads you had come to see me, as I think I could have made a few suggestions which you might have cared to adopt. This is a very important subject, in which I am deeply interested. If you see no prospect of meeting me at luncheon I will try to write to you on the question. After carefully reading all the correspondence which has taken place in the Press I am more than ever convinced of the great necessity for caution in dealing with the problem, because practically every letter that has appeared was written by a rabid partisan. Of course, if you have lost fifty or sixty good birds and have only had 2s. given you by the Hunt, you would be apt to write in a somewhat heated strain; but, then, what poultry have I kept?

Alas! when I told my friend that I should be only too delighted to have a contribution to the "symposium" from an ardent fox-hunter-cum-poultry enthusiast he made excuse:

I fear you will think me a fraud, but, on consideration, I have come to the conclusion that on the question of fox-hunting and poultry keepers silence is golden at the present moment. I shall, therefore, await with great interest the result of your inquiries. Perhaps, then, if anything moves in the matter, I may be able to help you—not that I think my opinions are worth much; and, of course, directly poultry keepers know that I fox-hunt they will consider that I am biassed, and fox-hunters *vice versa*! Anything that I may say will sure to be misconstrued one way or the other.

This note made me quite nervous! As it is, I seem to be one of the few writers on poultry-keeping who take the subject less seriously than theology, and venture to try to draw on the public to an interest in it by recognising from time to time some of the humorous aspects of the craft in its commercial developments. But if this kind of thing goes on I shall soon be among the company of the graver commentators on the life and works of what, I have never denied, is a thoroughly serious bird.

* * * * *

There is this to say, however, that your fox-hunter evidently takes his recreation or his business quite as seriously as the poultry keeper. "These matters," writes one Master of Hounds, with dignity, "are best discussed in private." "I fail to see," he proceeds—and I can hear his indignant basso-profundo—"how poultry keepers can expect to make a profit while taking no trouble, any more than any other business people."

This is a heavy blow. That, after all that the least experienced of poultry keepers has had to go through in his time, it should be suggested that it is possible to own hens without being put to trouble. This is an unfeeling world.

The subject of whether foxes shall have chickens for dinner below market price is not then a subject for open and friendly discussion between poultry keepers and hunting people. It must be "wropt in a

mistry"—as Jeames would no doubt have agreed. "I cannot think any good can come," writes a nobleman who is a Master of Hounds, "of any prying into the esoteric, so to speak." Two other peers somewhat similarly, but most civilly, excuse themselves also.

One Master prayed me to have him excused because he has "a very small country with few foxes in it, no poultry fund, and no poultry farms." That seemed conclusive, but he went on: "I have very few complaints, and always investigate them myself, and have found that generally half the sum asked for is gratefully received." "Nothing can live in this part of the world for 'traps,'" he concludes, "and I am sure a lot of foxes are killed for fear they would take poultry." Who, in such an idyllic country, can have a feeling against foxes strong enough to take their lives, it is difficult to imagine. If not motors, it must surely be tramps.

One Master let himself go, as everybody should when they are dealing with such a subject as foxes plus hens.

"Of course," he writes, "no Hunt could afford to pay fancy prices for poultry. There are other animals that would kill poultry besides foxes, if they were not shut up. Your question as to what my Hunt pays for damage is not a public question. Yes, I know that we have paid for poultry before now that were never even born. If poultry keepers were to start killing foxes there would be an end to hunting. In that case, how many millions would farmers lose, I wonder? Why, hay, straw, oats, and hosts of other things would go down to be not worth growing. And how many more unemployed would there be?—at least thirty more able-bodied men in this village alone."

But enough of jesting. I have to acknowledge very gratefully the almost uniform courtesy of my correspondents. Some of them in particular have taken a great deal of trouble, and I am very much obliged to them indeed. I sincerely trust that the publication of their memoranda will result in a more general realisation among poultry keepers of the point of view of hunting men. It will be seen that many of the writers of the notes from which I am about to make extracts have a very fair grasp of the attitude of poultry keepers. As several Masters ask me not to mention the names of their countries, I think, perhaps, I shall consult the wishes of the majority of my correspondents if I mention no hunt by name at all. The information at my disposal will be equally useful without identifying particulars.

First let us try to get at the facts as to whether poultry-keeping is increasing or not.

Only two correspondents say "No."

Several do not know. Two say, "Not greatly," one "Not very much," and a fourth, "A little, but not

much." A fifth says "No, except in a few cases with bungalow proprietors."

On the other hand, five say "Yes." One Master goes into the matter a little fully. He writes: "I should say that poultry-keeping is on the whole increasing, if not to any great extent. More people keep poultry, but the farms where a regular business is made of rearing for market and egg-producing purposes, where large numbers of chickens are reared and kept, are few and far between. Some years ago there was a large increase of poultry in this Hunt's country. But I think many of the farmers have found that it was not so easy to make poultry-keeping pay as they had anticipated without spending a good deal of time and trouble on it, and so have gradually given up trying to rear chickens in large quantities."

* * * * *

Now we come to an equally important question. What compensation is paid to poultry keepers? Is it market price or is it not?

One Master simply says, "The price varies." Another puts it this way: "We pay at a fair market price, but not for fancy breeds, prize birds, &c." Three Masters who furnish answers to all my other questions say nothing under this head, or profess their ignorance.

One statement is that the farmers arrange among themselves.

Two replies are to the effect that 2s. a head all round is paid. One Master says, "In the case of more valuable birds they go up to 5s. a head." The phrase on another return is: "From 1s. 6d. per head upwards according to value."

The matter is explained as follows by yet another Master: "Our basis is 3s. a couple for all sizes, but allowances are made to meet special circumstances. As to pure breds, I make no allowance, as a rule, my experience being that in seven cases out of every ten the claimant always declares that the chickens were pure, though on the farms one sees every conceivable sort of cross-bred birds." A last return says: "3s. per couple for young and old; occasionally a little more for well-bred ones; 4s. per couple for ducks."

* * * * *

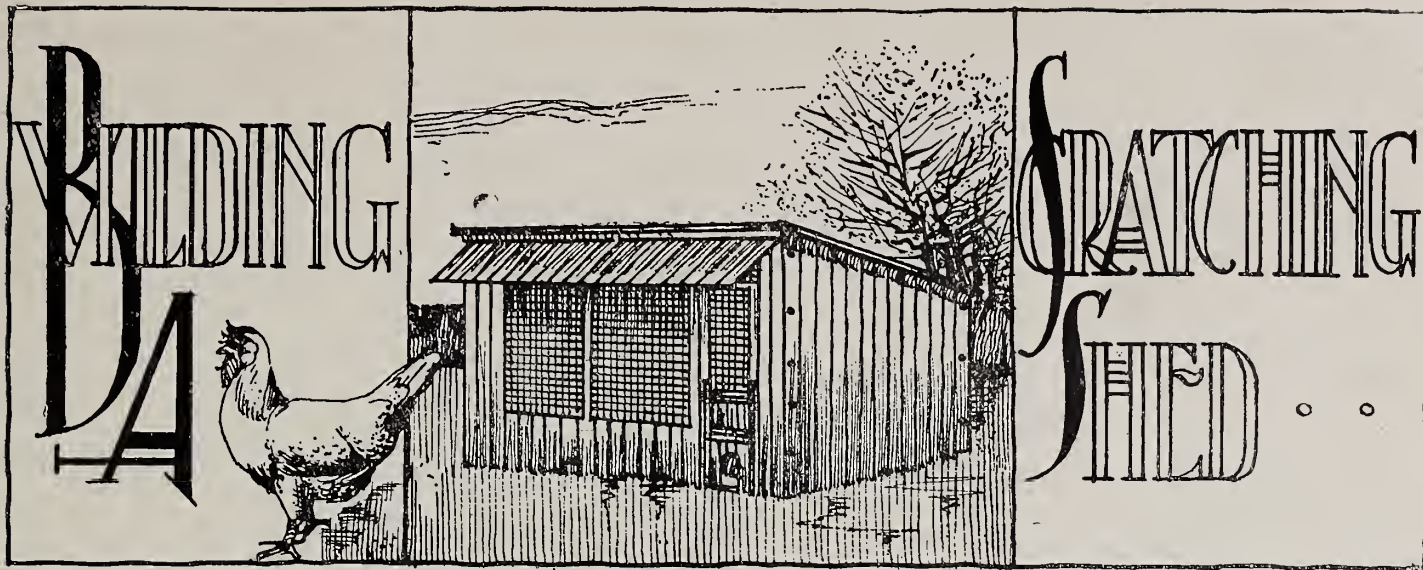
Some notion of the disposition of Hunts may be gained, no doubt, by noting the amount spent in the year on compensation for killed poultry.

Two or three correspondents are content to say that the amount varies.

One explains that compensation questions are managed entirely by a committee of farmers, each member of the Hunt subscribing not less than £2 to the fund.

In cases where total sums are mentioned we have the following figures: Say £30 a year. £70 to £80. About £120. About £150 (two Hunts give this sum). Between £400 and £500. From £650 to £800. Generally not less than £1,500.

(To be continued in our next issue.)



By T. TALFOURD CUMMING, A.R.I.B.A.

COST OF MATERIALS.

Note.—Allowance made for waste.

	£	s.	d.
360 ft. run of 2 by 2 deal at 4s. 6d. 100 ft.	16	3	
24 „ „ 2 by 1 „ ½d. ..	1	0	
11 „ „ 1 by 1 „ ..		4	
3 squares sup. 1 in. t. and g. boarding, 15s. 6d. ..	2	6	6
1¼ squares sup. ½ in. match ditto, 10s. ..	12	6	
No. 4 blocks for perches, 4½d. ..	1	6	
No. 2 runners for trapdoor ..	1	6	
Wire ..	6	0	
Felt ..	7	0	
Corrugated iron, 6 sheets at 4s. 6d. ..	1	7	0
Painting with preservative and lime- washing (materials only) ..	5	0	
Nails, hinges, screws, holdfasts, bolts, nuts, washers, and fastenings ..	10	0	
Cost of material, allowing for waste	£6	14	7

NOTE.—If several sheds were erected at the same time, a distinct saving could be effected in the cost by the purchase of the materials in larger quantities.

The illustrations show clearly the method of constructing a scratching shed, and so far explain themselves that no lengthy description is necessary, and any amateur should easily be able to construct the shed without help, except when bolting together.

The shed is constructed in sections, viz. : in the main part : four sides, roof and door with lifting trap attached ; internally with two sides to laying compartment, door and nests, two perches resting on rebatted blocks (the blocks screwed to boarding). Each side consists of head and sill framed to uprights with cross rail as stiffener, and intermediate upright to help support head and roof over. The back is formed in the same manner, but the front has the cross rail at a lower level and no intermediate upright (the door posts serving the purpose). The

front is divided by a 3 in. by 1 in. board into two panels filled with wire netting (1 in. mesh), and the upper panel of door and the space above are also filled with netting. The roof boarding is fixed to cross rails, two at the front and two at the back. They are spaced so that they form a groove into which the top of the front and back fit, and bolts are then put through to secure roof to framing of shed. Two other cross pieces are shown to strengthen roof.

The description of the construction of front applies to the two sides of the laying compartment with small modifications, which are clearly shown upon the drawing. The drawing also shows how the nests are constructed and the perches fixed.

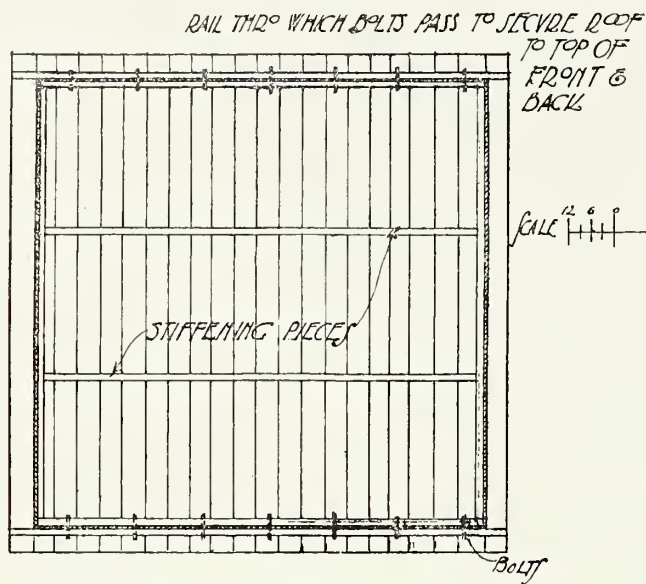
All the framing will be 2 in. by 2 in. deal, and the boarding 1 in. tongued and grooved except to roof, where it will be ½ in. matchboarding. The cross pieces on the shutter and lifting trap door will be 2 in. by 1 in.

It will be noticed that the boards are reduced to half their width, and in some cases round panels where wire occurs, particularly on doors.

The roofing felt would run from side to side and be secured to boarding so as to allow plenty of lap to the felt.

The corrugated iron for the roof should be in sheets 11 ft. long. Although, probably, the local merchants will not have these lengths in stock, they can be obtained from the makers, and the small extra cost incurred by using these sheets will be more than saved if one considers the extra labour which would be entailed if smaller sizes were used and the iron lapped. Secure the iron with bolts and washers to the rails of roof.

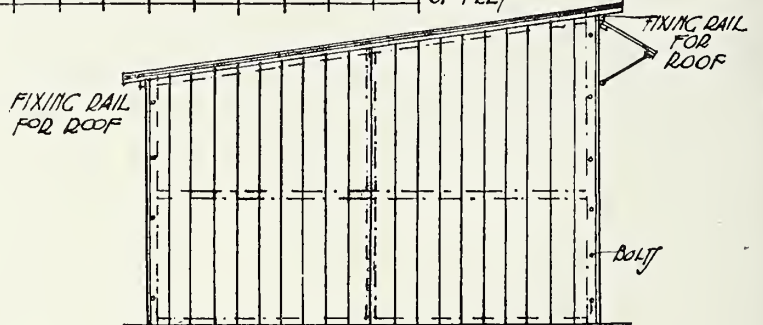
The whole of the woodwork should be treated with a good preservative before being put together and the inside covered with a hot limewash, when the shed is complete.



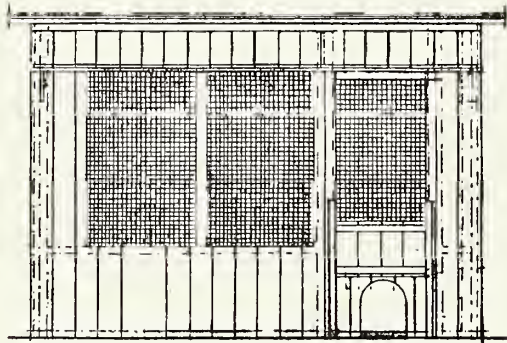
PLAN OF ROOF UNDERSIDE 1

SCRATCHING SHED SHEWING DETAILS OF CONSTRUCTION.

SCALE 1" = 6' OF FEET

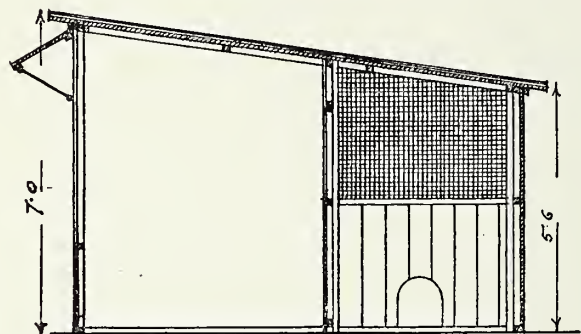


ELEVATION OF END 5



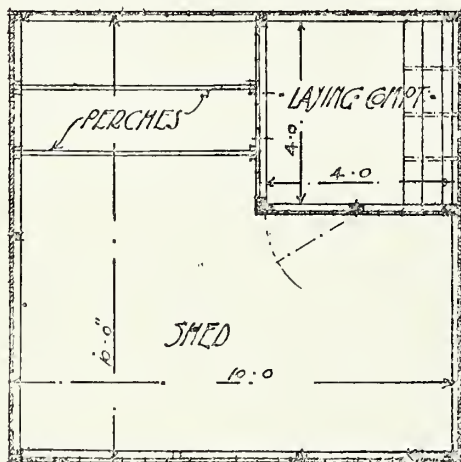
ELEVATION OF FRONT 2

SECTION OF
DOOR SHEWING
TRAP & RUNNERS
FRONT SHEWS
TRAP RAISED 3

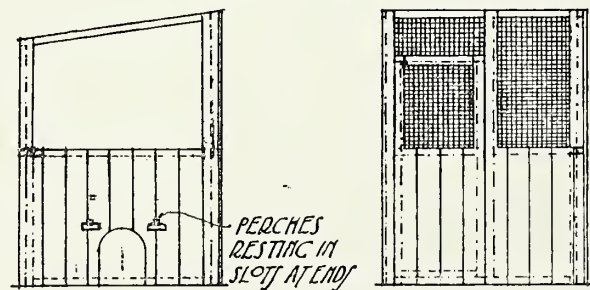


SECTION THRU LAYING COMPT. 6

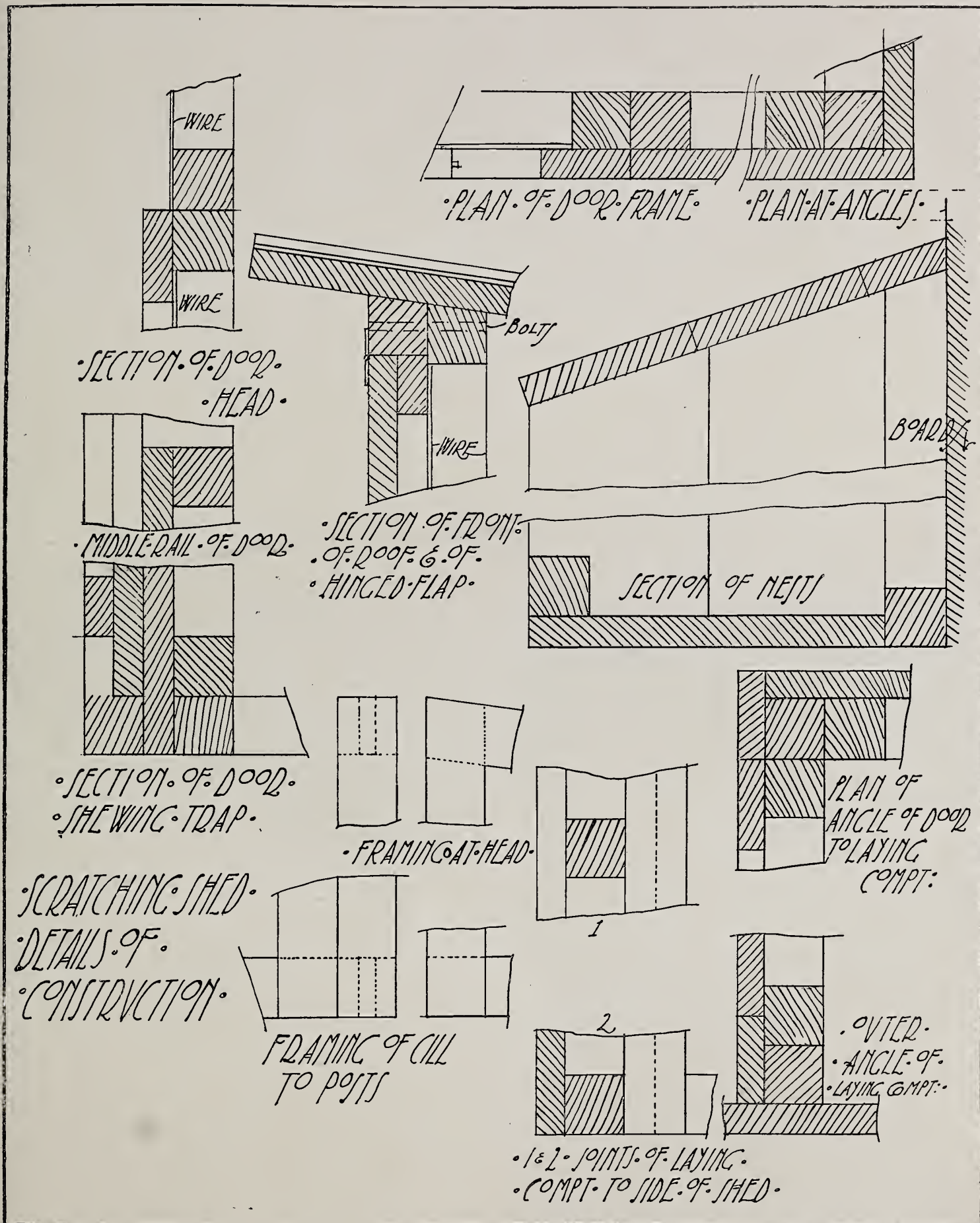
NOTE EACH SIDE, THE ROOF, THE TWO
SIDES OF LAYING COMPARTMENT, WITH THEIR
DOORS, FRAMED UP AS ONE SECTION,
THEN BOLTED TOGETHER, NUTS & WASHERS
KEPT ON OUTSIDE.
1" BOARDING ALL FRAMING 2" x 2"



PLAN OF SHED 4



OUTSIDE OF LAYING SHEWING SIDES 7 & 8



THE INFLUENCE OF SIGHT IN BREEDING.

By A. T. JOHNSON.

NOTWITHSTANDING the fact that science has come to the aid of the breeder and guided his hand, his art is still full of problems upon which no light has yet been thrown. Whether Mendelism will prove to be the lamp of the breeder of domesticated animals and plants, as Darwinism has been for the untamed world of nature, time and further research only can prove. But Mendelism, in so far as one who has not studied it very closely can understand, does not appear to get any nearer to the origin of variations—not so near, in fact—as Darwinism in quite another field has done. Whether that, however, should prove to be a stumbling block to either the one or the other is open to serious doubt. We know that variations do appear—often “spontaneously”—and if they are of any use to us we try to “fix” them as nature did, and has been doing, long before she ever dreamed of man. We know, for example, that a cross between two distinct strains of fowls will cause reversion to an earlier ancestor, but we are as much in the dark as ever we were on the question as to *why* that reversion should occur at all. Nature, by Darwin’s principle (and those who doubt the efficacy of natural selection as an explanatory theory of the origin of species can offer us no better working plan), has, in the animal and plant world, created an incalculable number of beings whose beauty and symmetry and adaptability to life are infinitely superior to anything under domestication or cultivation. In certain well-worn grooves man has increased prolificacy or altered type for his own ends, but his achievements are puny compared with those of nature. When we consider, for example, that a single cod fish will often contain ten million ova, that a queen-bee will sometimes deposit 10,000 eggs a day during summer, and a common meadow campion annually produce 30,000 seeds, one’s feelings of admiration for the achievements of the scientific breeder, great as they undoubtedly are, are rather rudely shaken. But it is far from being my object here to disparage the work of the breeder of live stock. Rather I would express my faith that, being as we are in the very infancy of scientific culture, our greatest attainments of to-day will, in the far future, be looked upon as the stepping stones to those greater heights, yet undreamed of, to which science will one day have led the breeder of domesticated stock.

I have long thought that the influence of sight or imagination may account for many strange and inexplicable variations which often perplex the breeder. And I do not believe that the thesis is a purely speculative one. The late Mr. Lewis Wright, whose

name was as well known to science as it was to poultry keepers, was firmly convinced of the importance of this influence and relates several instances in support of the theory. White Cochins kept along with some Black Minorcas constantly “sporting” black splashes in the progeny, and when the Minorcas were removed the black markings did not appear. The case is related, too, of a Brahma cockerel whose hocks were clipped quite short. After this was done the proportion of hocked chickens was very much smaller than before. And the same authority quotes a remarkable incident published in the *Lancet*, which relates how a professional man, a cup winner with pigeons at the Palace, kept some of his birds in a loft that faced “a lawn generally covered with white linen being dried,” and how the inmates of that particular part of the loft were especially subject to *albinism*. “It was also found that some Turbits and Owls next to a pen in which Pouters were kept were more or less subject to Pouter markings.” A similar instance occurred under my own observation, which proved conclusively to my mind that the influence of sight is a most decidedly important factor in the origin of variation. A pen of Buff Orpingtons and a pen of Houdans were placed alongside one another with only a wire-netting partition between them. Some of the Orpington chickens came with small crests on their heads, and this, at first, was naturally put down to some accidental crossing. But the utmost precautions were taken, the pens wired over, the gates locked and strict supervision maintained. But still some chickens would appear crested. To “check” the experiment, I then changed the Orpington pullets for others which had never been running with a male bird of any kind, and although no crests appeared for some weeks they did so afterwards in the same erratic manner as they had done with the former pullets. There was, therefore, no doubt that the *sight* of the Houdan had affected the progeny of the Orpingtons. I would not go so far as to contend that one breed is always more or less influenced by the sight of another, but I do contend that a more conspicuous, potent, vigorous bird—one with what we might say “a strong personality,” such as the Houdan I refer to possessed—will influence, by sight the progeny of a weaker one. And in this instance the Buff Orpington cockerel was a craven individual, always drooping when the Houdan approached too near, and the Orpington hens obviously had a distinct preference for the bolder and more gallant bird on the other side of the wire netting.

An interesting statement was brought to my notice some years ago as regards this subject, but, to my continued regret, I did not keep the notes substantiating

it. However, it was somewhat like this and may be given here for what it is worth. There are cattle breeders in some parts of the world (probably the Argentine), who believe that if a bull in the act of serving sees any cow of a colour differing from his own and that of the breed to which he belongs and which it is desired to maintain in its purity, the progeny will be affected and take after the colour of that cow. Thus precautions are taken to render such results impossible. This tale may, as I have said, require verifying, but with the episode of the Orpingtons and Houdan in mind it does not seem improbable.

How far the influence of sight may affect animals under domestication, how far it may account for many of these curious anomalies in colour and form which often perplex the breeder, cannot now be definitely stated with our present knowledge. But that it is a factor in determining some variation I am convinced. What its limitations are, however, in that respect, time and further experiment and research only can show. We have known for long that animals (and even plants) are more susceptible

to outward influences during the mating season or that of pregnancy than at any other time. We know that impressions for good or evil, mental or physical, are focussed upon the unborn young by the mother's ultra-receptive mind whether she wills it or not, and we know also that when occasion arises the male element, whether in plant or animal, is endowed by nature with a desire for procreation that is often blinded with the intensity of its purpose, that its individuality and its strength is urged by a nature that is prodigal to an extreme of wastefulness in her anxiety to fill life's brimming measure to flowing over. Under these conditions the greater receptiveness of the two sexes for outward impressions and the more distinctive and more strongly marked individuality of the male cannot but leave some imprint upon the progeny. Have we not, therefore, some grounds for believing that the influence of sight or of imagination is accountable for much of the variation that is going on about us? If we have not, that which we do know of the subject is sufficiently engrossing and conclusive to induce us to delve further into its romantic depths.

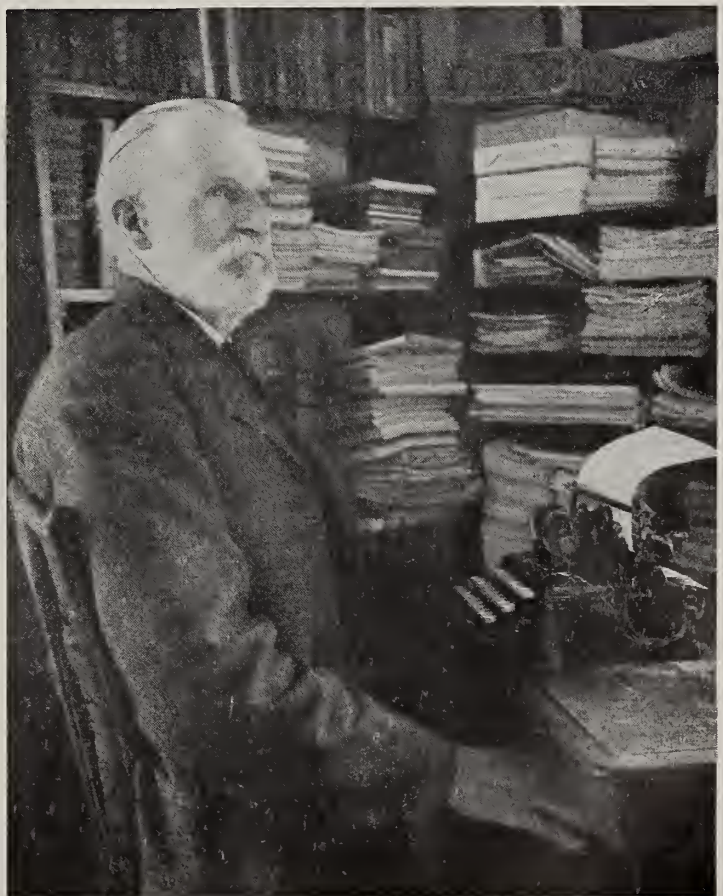
WHO'S WHO IN THE POULTRY WORLD.

MR. A. F. HUNTER.

TO have been the means of introducing two important developments in connection with the poultry industry is no slight contribution to the cause of progress. Such may be claimed as the achievement of Mr. A. F. Hunter, now of Abington, Mass., U.S.A., and, if there was nothing else to his credit, should fitly win him a place in THE ILLUSTRATED POULTRY RECORD's gallery of worthies. These were, first, the scratching-shed system of housing, popularised by him upon his farm at South Nantick, which he conducted for seventeen years on a large scale; and, second, the muslin curtain to open-fronted houses. The former has been widely adopted all over the world; the latter is only needed in cold, snow-driven districts, and is, therefore, unused in Britain. In some parts of America, however, it is almost indispensable, and has been very largely used at the Maine and other experimental stations.

Mr. Hunter is one of the veterans of the American Civil War. Born in 1846, he entered the United States Navy in 1862; after serving out the year of his enlistment he joined the army and was engaged with it until the close of the war in 1865. Unfortunately, that phase of his experience left traces of physical weakness, which has been to some extent counteracted by poultry-keeping.

For more than thirty years he has been keenly interested in poultry-keeping, and for nearly five-sixths of the time he has been a writer upon this subject. He was the first editor of *Farm Poultry*, which was established as a practical poultry paper in 1889,



Mr. A. F. Hunter.



Herr J. Byman.

being the first of its kind, and which has done much for development of the industry in America. For ten years he continued in that position. On his retirement in 1899, he was succeeded by Mr. John H. Robinson, who had been assistant editor for some time and whose portrait we gave last month. Since that date Mr. Hunter has written for several other

journals and is now associate editor of the *American Poultry Advocate*.

HERR J. BYMAN.

THIS gentleman is known to several breeders on this side the North Sea, for he was commissioned by the Swedish Government to study our methods of poultry-breeding four years ago. During his journey he visited many parts of our country, and evidently has put the knowledge thus gained to good use, as may be seen by Mr. Edward Brown's "Report on the Poultry Industry in Denmark and Sweden," published a few months since. His home is at Vintrie, a few miles south of Malmo, where he conducts a breeding centre and has carried out several experiments in connection with geese. His latest addition to poultry-breeding—a trap nest—was described in our pages last month.

Mr. Byman was born in 1875 and has been a zealous poultry keeper since he was a boy. On the formation of the Malmo County Poultry Society in 1902 he was appointed secretary, which position he still holds, in addition to which he is *konsultent* or adviser, and on the establishment of the society's journal (*Skanes Hons Tidings*) he was made editor. His "History of the Poultry Industry in Sweden" is a standard work in that country and he is author of several other books. He was secretary of the Malmo Poultry Shows in 1903 and 1905 and a member of the organising committees of the exhibitions of 1907 and 1908. It is largely owing to his influence that so much attention has been paid to the improvement of table poultry in Sweden, in which direction that country has made considerable progress, especially by the introduction of the Buff Orpington.



BREEDING PENS ON HERR J. BYMAN'S FARM.



Exhibiting Chickens.

Readers of last month's ILLUSTRATED POULTRY RECORD will probably have noticed that both Mr. W. M. Elkington (in his notes for amateurs) and I touched on the subject of the new regulations of the Poultry Club regarding the age of young birds for show purposes, but that we took opposite views on the question as it concerns the amateur exhibitor. Mr. Elkington suggests that the regulation "will by no means lighten the already heavy handicap" of the amateur, and that "the small breeder will be unable to participate in such early hatching" as is requisite to ensure his birds being forward enough for the summer shows. I think that it is scarcely necessary for me to repeat my views on the subject, since they were fully given in last month's issue. But I should like to emphasise the fact that the amateur who wishes to rear early chickens can do so as easily as the large breeder and exhibitor. The question is, will it pay him to do so? It has been fully demonstrated that for utility purposes chickens hatched in October and November are profitable for table purposes, while those out in January generally prove prolific layers. If it is possible, therefore, to hatch chickens early for those purposes why should it not be so for the show pen? The small breeder who is anxious to send well-developed specimens to the summer exhibitions should bear in mind that "one cannot eat one's cake and have it." Birds which are much exhibited in the early winter are not then in a fit condition for the breeding pen; consequently, if the small breeder's stock is confined to one pen, and he wants early chickens, he should give up late showing. The point is that the old recognised rule regarding the illegality of hatching before January 1 could not possibly have been more stringent than it was, and it was altered solely in the interests of novices. But there is a possibility that the old rule will be largely in force next year, since it is entirely in the hands of show executives whether classes will be for chickens or for "birds hatched in 1909." They alone have the task of compiling their schedules, and there is not a Poultry Club rule forbidding them to insert such a condition!

New Varieties of Poultry.

During the past ten years or so it is probable that more new varieties of poultry have been placed before the public than has been the case since "the

hen fever" took hold of this country. Those of us who have watched the growth of the Fancy have seen many breeds brought out and boomed, some to last for a season or so and then to become defunct, while others have stood the test of time and much opposition and are still flourishing. Complaints have been made that nowadays there is too great a craze for novelty, and that, instead of seeking for something different, the fancier (for, be it noted, it is rarely that the strictly utilitarian poultry keeper can be charged with bringing out a new variety) should strive to perfect the races which he already possesses. Be that as it may, one cannot overlook the fact that new breeds very often appeal to those people who have never previously taken any interest in poultry, and as an outcome the Fancy is largely increased by these recruits. That of itself is sufficient excuse for their introduction from a fancier's point of view—if, indeed, he considered that excuse were necessary. But if a breed is to be popular, and remain so, it has to be more than beautiful, otherwise as a purely fancy fowl it will not exist for long except in the hands of a few. It has to possess good utility properties, since it is patent that all chickens which are reared, even if from the best stock in the land, cannot be sold at Fancy prices. Some have to be potted, while others must go to keep down the bill for imports of eggs. Get a breed useful as well as ornamental, and its popularity is assured. The useful properties are easily attained, since the mere fact of crossing two or three varieties will do this; it remains with the fancier to perfect the ornamental.

Rose-combed Black Leghorns.

One of the latest varieties, or, strictly speaking, sub-varieties of exhibition poultry to be exploited in England is the rose combed Black Leghorn, which made its *début* at the recent Morecambe (Lancashire) Show, where, in the two classes provided for it, there were fourteen entries of cocks and eight of hens, the sexes in this instance standing for birds of any age. Rose-combed Leghorns are not unknown, and in America there have existed for years such varieties of Brown, Buff, and White. There may be others, but of that I am not certain. Rose-combed Whites have been tried in England. Some years ago I saw a pair at a South-Country exhibition; but they did not become popular. As a matter of fact, we have been used for so many years to look on the Leghorn

as a single combed breed that we are apt to view the innovation as "altogether out of it." One might as well attempt a singled combed Hamburg or Wyandotte ! But the fanciers of the Rose-combed Black Leghorns mean to "stick to their guns," and I see that two classes for their *protégé* are provided at Hanwell (Middlesex) Show on December 1. That it will meet with opposition goes without saying ; and at a recent gathering of the Black Leghorn Club committee it is reported that the question of recognising the Rose-combed Black Leghorn was carefully considered, and after a lengthy discussion it was decided by a large majority (please note, there were nine members at the meeting) that the club does not recognise the variety. But such opposition generally proves the best advertisement ! There was similar opposition when the Rose-combed Black Minorca was first taken up in this country ; but at least one of the three English Minorca clubs has decided to recognise it, and provision is made at its forthcoming club show for two classes for Rose-combed birds.

The Brown Sussex.

Yet another new variety to be taken in hand is what in the catalogue of the recent Lewes Show was described as a Brown Sussex. As a matter of fact the Brown Sussex has been in existence for some time, ever since the Sussex Poultry Club was formed for the purpose of improving the breed ; and the three varieties recognised and fostered by that club are the Speckled, the Light, and the Red (or Brown). But the new variety differs from all of these, and, since that is so, it is somewhat erroneous to dub it the Brown. A much more appropriate cognomen for it would be Black-red, since the male bird has a very lustrous black breast and deep red top colour with densely striped hackles, while the female's colour resembles that of the Black-red or Partridge Old English Game fowl. Such names are apt to lead to confusion, and there is sufficient confusion already in the Fancy. Thus we have the Black-red Game, the Brown Leghorn, and the Partridge Cochin, all of similar colour and markings, although the black-red, or black-breasted red, is the original term, and the present Brown Leghorn commenced its existence under that name. However, as there already exists a Red (or Brown) variety of the Sussex fowl, may I suggest to the Sussex Poultry Club, if it decides to add the new variety to its list, to do so under the head of Black-red ? It might even be Partridge ; rather than Brown, which is, candidly, a misnomer, despite the Brown Leghorn.

The Blue Leghorn.

By the frequent reference to Leghorns in this month's notes, it might appear that I was desirous of giving the breed undue prominence. I cannot, however, refrain from a few remarks on the present misunderstanding in the Blue Leghorn Fancy. From statements which have recently been made to me, and in some of our contemporaries, no doubt exists that there are two distinct types of Blue Leghorns now being exhibited. The distinction deals solely with the colour question, since in general characteristics all are agreed that the variety must resemble the true Leghorn. On the one hand there is an established club, formed solely to look after the

interests of the Blue Leghorn, whose standard of perfection aims at clear blue fowls ; while on the other a sub-committee of the Leghorn Club, together with representatives of the Leghorn, Plymouth Rock, and Andalusian Club, have decided that the Blue Leghorn shall be a black topped fowl. That such a ridiculous state of affairs should exist in the Fancy is deplorable, and it is to be sincerely hoped that the matter will be taken up in the right quarters and something definitely decided ere another breeding season comes round. It is a great pity, too, in view of the fact that the Blue Leghorn Club will hold its show at Leeds, that the Leghorn Club, whose exhibition will also be held in connection with that event, should put on two classes for the blue variety, more especially as the older body does not possess a standard for it. Is the Leghorn Club judge to adjudicate on the birds according to his own ideas, or will he receive instructions from headquarters ? The thing is absurd ; and as the Leghorn Club did not trouble to form a standard for the Blue variety, the least it can do is to bow to the wishes of the majority, for surely the majority is represented by the existing Blue Leghorn Club. Since penning the above, I hear that the Leghorn, Plymouth Rock, and Andalusian Club at a well-attended meeting, held at the International Show, on November 19th, decided by a strong majority to adopt the standard of the Blue Leghorn Club with a few modifications.

THE RHODE ISLAND RED.

One of America's Most Popular Fowls.

By EDWARD T. DE GRAFF.

NEVER before in the history of the poultry business in the United States has any breed of fowls jumped into such prominence in such a short time as the Rhode Island Reds, and, judging by the large number shown in the leading shows all over the country and the many good words heard about them on all sides, they have come to stay and hold their own as America's leading utility fowls.

Americans naturally take considerable pride in the fact that the Reds are purely an American breed, as they were discovered in Rhode Island. From this fact, along with their beautiful red colour, comes the name Rhode Island Red, and if the smallest State in the Union had never done anything else to redeem itself, this act alone would make her a credit to the nation. The Reds are what might be called an "out bred" breed, as they are the result of many years' breeding, with the main object in view of eliminating all the undesirable qualities and introducing the strongest vitality, hardiness, and prolificacy that it was possible to combine in these fowls, as the raising of poultry and eggs was the main business, and everything that would elevate the standard of the flock furthered that end.

Experience taught that the Red males were the most vigorous and would produce the largest percentage of fertile eggs that would hatch healthy chicks at all times of the year, so these practical

breeders kept using the very best males they could find from year to year; and they would have the sea captains bring them home the reddest males they could find in foreign ports. While the colour of the hen was of no consequence to them just as long as she was of proper size and shape and laid large brown eggs, still, this continual breeding from Red males soon brought a large share of the females to be more or less Red. Therefore the Red is purely a business fowl, founded on good business principles, and the fancy breeding is only of recent years. In this short time they have been improved so fast, as to standard requirements, that the old breeders of Little Compton, R.I., would hardly think that their harmonious brilliant shades of Red were from the mottled Reds they kept so many years ago.

Each year sees a great improvement in colour, and when once these birds are line bred on scientific principles the result will be a breed that will produce more show birds than any other now before the public, as their continual improvement is remarkable, and their worst enemies of a few years ago have to admit that they were wrong in their opinion of the breed. Among their many redeeming good qualities I might mention the undisputed reputation as great winter layers. They have been acclimatised to cold weather, and have a very thick coat of feathers which is impervious to the cold winter blasts. Being extremely hardy, they do not suffer from the cold as do many breeds, and their combs are not so large that they get frozen easily. The young chicks are the easiest to raise of all the breeds I have ever tried, and if they are given free range with the hens as mothers they will almost raise themselves, as they are so active and such natural foragers that they can find most of their living. With proper care and feed a two months' old broiler can be grown to weigh 2 lb. and have the meat where it belongs, instead of being all bones and feathers, like some other breeds at this age; while at three months they are first-class broilers or roasters. As the cocks weigh, when matured, from eight to ten pounds and the hens six to eight, according to age and condition, they bring something to eat after they are through with their usefulness as layers. I consider one of the strongest points in favour of this breed is the fact that their eggs, if given proper care, are fertile all the year round, which cannot be said of some of our breeds, and the raising of chickens all the year round is getting to be quite a business in this country, in order to supply the great demand for broilers at the large hotels. I find the Red broilers will command a premium over all others, as they have more meat in proportion; their yellow skins and legs make them very attractive, and their flesh is very tender and juicy.

I was recently selected to take charge of a Red School of Instruction to Judges, held under the National Single Comb Red Club, for the purpose of determining on the proper shade of red to be considered most desirable, since the wording of the standard simply says rich brilliant red, whilst the dictionary says there are about sixty different shades of red. We decided that neither the dark mahogany red nor the light straw-coloured red was desirable; but that the shade to be bred for was one about midway between the two, and that it should harmonise

in all sections of the back and wing bows, neck and saddle hackles. When this colour is secured to perfection we have as grand a plumage as could be desired. The females should have a rich even bloom in all sections, of a shade to match the breast of the prize-winning males.

The Reds have a characteristic oblong body that no other breed can touch for business qualities, which important point should have first consideration from the judges. For several years back there has been an unsatisfied desire to reproduce this breed in actual



Rhode Island Red Cockerel.

colours, but the clubs at the back of it felt that colouring could not be obtained, that would do the breed justice. I decided, therefore, to see what I could do in this line on my own account, for my catalogue, and the fact that I have sold 5,000 copies of my catalogue with this colour plate proves the general appreciation of the work and the popularity of the breed.

I have shipped Reds to all parts of the earth and never lost a bird. The strange thing is that they do well in Alaska, where I had a customer report 193 eggs per hen a year, and that in the Argentine Republic they are giving perfect satisfaction. I have never yet seen a breeder drop the Reds after once giving them a thorough trial, and I honestly believe the day is not far hence when the Reds will be among the greatest fowls on earth. The accompanying pictures show two of the most ideal specimens ever shown in America, and they are untouched photographs.

STANDARD ADOPTED BY THE RHODE ISLAND RED CLUB OF AMERICA.

Disqualifications.

Feather or down on shanks or feet, or unmistakable indications of a feather having been plucked from the same.

Badly lopped combs.

More than four toes on either foot.

Entire absence of main tail feather.

Two absolutely white (so-called wall or fish) eyes.

Wry or squirrel tails.

A feather entirely white that shows in the outer plumage.

Ear-lobes showing more than one-half the surface permanently white. This does not mean the pale ear-lobe, but the enamelled white.

Diseased specimens — crooked backs, deformed beaks, shanks and feet other than yellow or red horn colour. A pendulous crop shall be cut hard.

Under all disqualifying clauses the specimen shall have the benefit of the doubt.

Standard Weights.

Cock . . .	8½ lb.	Hen . . .	6½ lb.
Cockerel	7½ lb.	Pullet ..	5 lb.

Apparent vigour to be regarded with the consideration of shape.

Shape of Male.

Head.—Of medium size and breadth.

Beak.—Short and regularly curved.

Eyes.—Sight perfect, and unobstructed by breadth of head or comb.

Comb.—Single, medium in size, set firmly upon the head, perfectly straight and upright, free from side springs, with five even and well defined serrations, those in front and rear smaller than those in the centre, of considerable breadth where it is fixed to the head.

Comb.—Rose, low, firm on the head, top oval in shape and surface covered with small points terminating in a small spike at the rear. The comb to conform to the general curve of the head.

Wattles.—Medium and equal in length, moderately rounded.

Ear-lobes.—Well developed. Symmetry of proportion in head adjuncts is to be considered.

Neck.—Of medium length and carried slightly forward, not arched backward. It is covered with abundant hackle, flowing over the shoulders but not too loosely feathered.

Back.—Broad, long, and in the main nearly horizontal; this horizontal effect being modified by slightly rising curves at hackle and lesser tail coverts. Saddle feathers of medium length and abundant.

Breast.—Broad, deep and carried in a line nearly perpendicular to the base of the peak, at least it should not be carried anterior to this line.

Body.—Deep, broad and long, keel-bone long, straight, and extending well forward and back, giving the body an oblong look.

Fluff.—Moderately full but feathers carried fairly close to the body, not a Cochín-fluff.

Wings.—Of good size, well folded and the flights carried horizontally.

Tail.—Of medium length, quite well spread, carried

fairly well back, increasing the apparent length of the bird. Sickles of medium length, passing a little beyond the main tail feathers. Lesser sickles and tail coverts of medium length and fairly abundant.

Legs.—Thighs large, of medium length and well covered with soft feathers. Shanks of medium length, well rounded and smooth.

Toes.—Straight, strong, well spread and of medium length.

Colour of the Male.

Beak.—Red horn colour, or yellow.

Eyes.—Red.

Face.—Bright red.

Comb, Wattles, and Ear-lobes.—Bright red.

Shanks and Toes.—Yellow or red horn colour. A line of red pigment down the side of the same is desirable.

Plumage.—General surface rich brilliant red except where black is desired. Free from shafting, mealy appearance or brassy effect. Depth of colour (red) is slightly accentuated on wing bows and back, but the least contrast between these parts and the hackle or breast the better; a harmonious blending is what is desired. The bird should be so brilliant in lustre as



Rhode Island Red Pullet.

to have a glossed appearance. Other things being equal, the specimens having the deepest and richest red, salmon, or buff under colour shall receive the award. Any smut or white in the under colour is to be cut hard. The quill of the feather should be red or salmon. White showing on the outside of the body is to be cut harder than white that is out of sight.

Black is desired in the under-web of the wing flights. The main tail feathers and two main sickle feathers are to be black or greenish black. The greater tail coverts are mainly black, but as they approach the saddle they may become russet or red. The blending of the red body with the black tail is gradual, thus preventing any sudden contrast. With the saddle parted showing the under colour at the base of the tail, the appearance should be red or salmon, not whitish or smoky. The hackle should be free from black, although a suspicion of black, that can hardly be found, would not cut the bird much. White in hackle will be cut harder than black. The wing bars should be free from black, and all black in the primaries and secondaries should be out of sight when the wing is folded.

Shape of the Female.

Head.—Of medium size and breadth.

Beak.—Short and slightly curved.

Eyes.—Sight perfect and unobstructed by breadth of head.

Comb.—Single, medium in size, set firmly upon the head, perfectly straight and upright, free from side sprigs, with five even and well-defined serrations.

Comb.—Rose, low, firm on the head, much smaller than of the male and in proportion to its length much narrower. Covered with small points and terminating in a small short spike at the rear.

Wattles.—Medium and equal in length, moderately rounded.

Ear-lobes.—Well developed. Symmetry of proportion in head adjuncts is to be considered.

Neck.—Of medium length and carried slightly forward, at least not much arched backward. Hackle sufficient but not too coarse in feather.

Back.—Long, in the main nearly horizontal. In the completely matured hen it would be described as broad, whereas in the pullet not yet well matured it will look somewhat narrow in proportion to the length of her body. The curve from the horizontal back to the hackle or tail should be moderate and gradual.

Breast.—Deep, broad and carried in a line nearly perpendicular to the base of the beak, at least not anterior to that line.

Body.—Deep, broad and long, keel-bone long and straight, giving the body an oblong look.

Fluff.—Moderately full, but not loose (Cochin) in feathering.

Wings.—Of good size, well folded; the flights carried horizontally.

Tail.—A little shorter than medium, quite well spread, carried well back, increasing a trifle the apparent length of the bird. The tail should form no apparent angle with the back, neither must it be met by a high rising cushion.

Legs.—Thighs, of medium length and well covered with soft feathers. Shanks, of medium length, well rounded and smooth. Toes, straight, strong, well spread and of medium length.

Colour of the Female.

Beak.—Red horn colour or yellow.

Eyes.—Red.

Face.—Bright red.

Comb Wattles and Ear-lobes.—Bright red.

Shanks and Toes.—Rich yellow or red horn colour.

Plumage.—General surface colour lighter than in the male, free from shafting or mealy appearance. Except where black is desired the colour is a rich even shade of reddish buff darker than the so-called "golden buff." The female is not as brilliant in lustre as the male. Allowance should be made for the fading of the mature hen, incidental to her prolific laying. The under colour is of reddish salmon or buff, free from foreign colours. Other things being equal, the specimen having the richest under-colour shall receive the award. The quill of the feather should be red or salmon. The general surface colour in the female is more even than in the male. White showing in any part of the plumage is a serious objection. Black peppering in the other plumage of any feather is also very objectionable. Black is desired in the under-web of the wing flights, and on the tip end of some hackle feathers. This black in the hackle should be a slight ticking rather than a heavy lacing. The main tail feathers are to be black or greenish black.

NOTES ON EXHIBITIONS.

THAT the late autumn and early winter are the most suitable seasons for the exhibition of poultry is apparent from the fact that the vast majority of the year's shows invariably take place from the middle of September to just before Christmas. But it will doubtless be a matter of surprise to most readers to hear that between November 3 and 28 there were no fewer than 111 of such events. And as, during that period, there were four vacant dates—three Mondays and one Friday—on which no shows were held, it will be seen that the average number of exhibitions for each week-day (Sundays, of course, are not included) was a fraction under six. What that means when it comes to a question of entries may not be very apparent perhaps to the casual fancier; but with the show secretary it is generally a harassing time, and numerous urgent appeals for entries are made at "the eleventh hour." As a matter of fact, however, although there has been much clashing of events, the November shows were not so badly supported on the whole as we have known them to be; and while some, of course, have suffered, at others "records" have been reported.

The first of the fixtures for last month was an important one at Barnstaple, Devon, on the 3rd, in conjunction with which the Indian Game Fowl and Bantam Club held its annual show. In the general exhibition a few classes were certainly cancelled, chiefly those for Anconas, Andalusians, and Aseel, which breeds, after all, are not generally numerously supported; but with those exceptions the entry was very satisfactory indeed. And since the first prize was £1 and there were numerous valuable specials, the quality of the exhibits was of the highest. The club show proved a great attraction, and the turn-out was very good in all respects, which after all is not very surprising, considering that the club's affairs are in most capable hands, and that the West Country has for long been considered the home of the Indian Game fowl.

On the following day there were nine shows, and at least one of them should have been a big affair, in that 146 classes were scheduled with cash prizes of £1 first, 10s. second, and 5s. third. But it did not by any means come up to expectations, because, most unfortunately, 45 classes had to be cancelled owing to lack of support, and this despite an urgent appeal for entries and an extension of the date for receiving them. I refer to Kendal Show, which was disappointing. Some of the classes which did stand averaged well, and this was particularly so in Orpingtons. There was a nice display of Wyandottes, although five of the fourteen classes were expunged. The same may be said of Old English Game, large and bantams; yet here again, and in a district, too, where one expects to find the breed very well supported, five of the former and four of the bantam classes failed to attract sufficient entries. The greatest surprise of the show, however, was in the Leghorns, for with an acknowledged authority officiating, in fact, a well-known club judge, ten of the thirteen classes were cancelled, although the two for Blues had a good entry. In Bantams, too, the state of affairs was not much better; six classes for Modern Game, four for Rosecombs, two for Pekins, and one selling were expunged, so that what might have been a good display of the miniatures was reduced to four for Sebrights, two each for Plymouth Rocks and any other variety, and one for selling, beyond those for Old English Game bantams already mentioned.

The Plymouth Rock Club held its annual show in connection with the Kendal event, but, unlike the general exhibition, it was a complete success. Twenty-six classes were provided and each was well supported, the total entry being over 300. The classes for novices were thoroughly representative—in fact the largest class in the section was that for Barred pullets (novices) with twenty-one entries. The Barred variety was, indeed, exceptionally strong. It is very pleasing to find that classes for it are being so well supported at the big shows this season, and it certainly looks as though the Barred Plymouth Rock will soon regain the prominent position it once held in the Fancy.

The next important poultry exhibition of the month was at Ulverston, Lancs., on the 6th. In this instance the result was highly satisfactory, and not one class was cancelled. The special features of the poultry section were the Wyandottes, Orpingtons, Plymouth Rocks, and Old English Game, and in each breed not only was there a good entry but the quality of the birds was equal to that seen at the classical events of the season. There was also a very pleasing display of Black as well as White Langshans, while in the special auction class for any variety of poultry there were thirty-two exhibits.

In the following week there was the big meet of specialist clubs at Bristol on the 11th and 12th. The Columbian Wyandotte Club Show was better numerically than the event which the club held last year, and on the whole, although the variety is far from perfect, there was a distinct improvement in the quality; the best filled classes were those for cockerels and pullets. It was unfortunate that in the Gold and Silver Laced Wyandotte Club section many of the classes were penned on the ground, since it rendered it very difficult for visitors and others to

inspect the birds. However, there was a very good entry of first-rate specimens, and without doubt it was one of the very best displays of the laced varieties seen at the shows for some time. The turn-out in the Partridge Wyandotte Club Show was remarkably good all round, entries being well in advance of those at last year's event, and the quality being quite up to the usual high standard, a result which must have been very gratifying indeed to the indefatigable hon. secretary of the club, and which also should go a long way to refute the statement that the Partridge is not now a popular variety. The Silver Pencilled Wyandotte Club section was not very strong; the entries were scarcely up to last year's total, but there still seems to be plenty of life in the variety, which should soon go ahead. The novice classes were the best supported—a pleasing feature and one that should prove the utility of catering for the novice. Perhaps the best of the Wyandotte Clubs' Shows was the white section, where eleven classes were provided, and the entry averaged well over fourteen in each. The novice classes were particularly strong in numbers, while the quality on the whole showed a great improvement.

The Buff Plymouth Rock and the Faverolles Clubs also held their annual events at Bristol. In the former the entry was about on a par with that of the 1907 show, while the quality, as usual, was very good. One noticeable feature was that the judge showed a decided preference for type; and in this respect it would be difficult to surpass the winning cockerel. There was a better display of Faverolles than at last year's fixture, the chief increase being in the young bird classes and in those for novices. The Black variety was not catered for this year, which is not surprising, since only five turned up in the two classes at the 1907 event, and the variety is practically now extinct. A class was added for breeding pens consisting of a male and two females; but it was not a strong one, six pens being the extent of the entry. In the general classes of the show three or four were cancelled, nevertheless the entry was very good, and the grand total for the poultry sections was not far short of 1,450 pens, of which the club shows accounted for close upon 900.

The most important poultry show of the season, to wit, the Grand International, came off at the Crystal Palace on November 17, 18, and 19; but as a general *résumé* of the affair appears elsewhere in our present issue no further reference need be made to it in these notes. Towards the close of the month there were important exhibitions held at Newport, Monmouth (known as Lord Tredegar's Agricultural Show), on the 24th and 25th; at Launceston, Cornwall, on the 24th; at Cambridge on the 25th; at Carlisle, Cumberland, Cirencester, Gloucestershire, and Mountmellick, Queen's County, on the 25th and 26th; at Milnthorpe, Westmorland, and Chippenham, Wilts, on the 26th; at Horsham, Sussex, on the 27th; and at Egremont, Cumberland, on the 27th and 28th; but as reports of these events have not come to hand up to the time of going to press, we can only notify the fact that they were held.

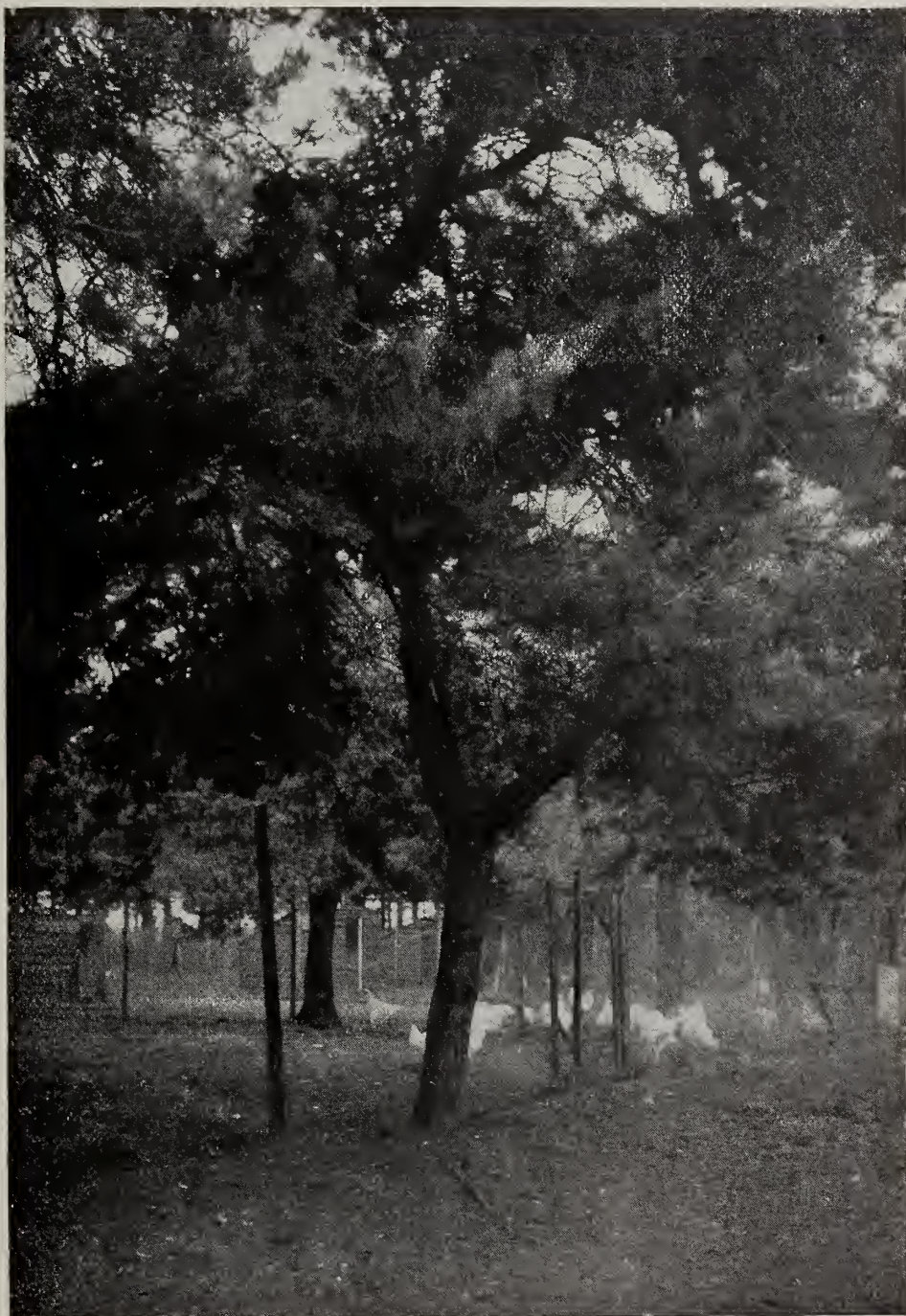
The foregoing are but few of the total for November—in fact, they are simply the most important of last month's fixtures. Among other very representative

gatherings was the Tunbridge Wells Show on the 4th and 5th, and although it clashed with other events, there were about 340 entries in the thirty-five poultry classes, and competition was keen. Good shows were also held at Carmarthen, and at Hassocks, Sussex, on the 5th; at Darvel, Ayrshire, Markinch, Fifeshire, Chesterfield, Derbyshire, New Mills, Cheshire, and Silsden, Yorkshire, on the 7th; at Sudbury, Suffolk, on the 10th; at Carshalton, Surrey, Bodmin, Cornwall, and Dudley, Worcester, on the 11th; at Merthyr, Glam., and Abingdon, Berkshire, on the 12th; at Paisley, Renfrewshire, on the 14th; at Cardiff, Glam. (probably the most important of the Welsh fixtures), on the 18th and 19th; at Matlock, Derby, on the 19th; at Tonbridge, Kent, and Reading, Berkshire (the first show of the Ladies' Poultry Club), on the 25th; and at Polesworth, Warwick, on the 27th.

THE CRYSTAL PALACE SHOW.

THE seventh Grand International Show was held at the Crystal Palace, Sydenham, on November 17, 18 and 19, and although the entries in the poultry section were scarcely so numerous as at the 1907 event, there was nothing lacking to make the show the greatest of its kind in the world. The Palace has always had a good name, and the present management is doing its utmost to keep up that reputation. Throughout the poultry Fancy a win at the Sydenham exhibition is a win of the year, and there can be little doubt that it is the best gathering of the season in more than one way. The show always proves a great draw, and it is yearly visited by some of the best Continental fanciers, and sales are generally very good.

The poultry section led off with five classes for breeding-pens, a male and two females, in which were fifty-six entries. One exhibitor penned most of the winners in the Black Wyandotte and Blue Leghorn classes, the only two which were for separate varieties. In the first class, which was open to Dorkings, Orpingtons, Plymouth Rocks, and Wyandottes (other than Black), the chief award went to an excellent trio of Black Orpingtons, while in that for any other variety of clean-legged fowls a pen of very powerfully-shaped Indian Game took first prize. The feather-legged breeds had a class to themselves, and the winning pen of Buff Cochins secured the special prize for the best exhibit in the section. The Dorking Club show, which followed, made a very representative display. The classes for Darks were remarkably well filled, there being no fewer than twenty-one cockerels while the Silver-Greys were better than we have seen them for some time, although there were only seven old cocks entered. Brahmas were forward in good numbers, and the Light hen which was awarded the challenge trophy for the best specimen of her breed also won the much-coveted 30-guinea Poultry Club Challenge Trophy and the 10-guinea Champion Challenge Trophy for the best hen or pullet in the whole poultry section. She is indeed a fine specimen. There was a very good entry of Cochins, 108 of the four varieties, and competition was keen. The International Challenge Trophy went to a Buff pullet from a noted Durham yard, and it was a well-merited win. The Langshan Society's show was a good one, and it is a long time since better birds have been staged



AN IDEAL SPOT FOR WHITE PLUMAGED BIRDS.

[Copyright.]

at an exhibition than those which were at the Palace.

Orpingtons again proved to be one of the strongest features of the show, which is not surprising since the section included the exhibitions of four specialist clubs. The first was that of the Black, with about 150 entries. Young birds, of course, were forward in the greatest numbers, but the best filled classes were those for novices—twenty-five cocks and twenty-seven hens. A Black cockerel from the champion yards of the world secured the 30 gn. Poultry Club Challenge Trophy and the 15 gn. Champion Challenge Shield for the best cock or cockerel in the show, while birds from the same establishment were awarded the Black Orpington Club's cups for the best pair of old birds and the best pair of youngsters, the latter cup being won by the same exhibitor for the fourth year in succession. Buff Orpingtons, since the show was that of the club, were especially numerous and of rare good quality right through. The Dairy winning cockerel carried off the International Challenge Trophy and Medal for the best of his breed and the Poultry Club special, while a cock owned by the same exhibitor won first prize in the adult class. Here, again, the novice classes were very strong, both in quantity and quality, and many of the fowls in them were good enough to win quite a decent open class. The display in the White Orpington Club show was the best seen for many years, and it is noticeable to what a high state of perfection fanciers of this variety have brought it. Considering the short time in which the Spangled Orpington Club has been in existence the turn out at the club show was highly satisfactory, but we could hardly agree with some of the awards. Jubilee Orpingtons were not very numerous and the class for adults was cancelled, but quality was up to the mark, while the Cuckoos were certainly the best we have seen.

Wyandottes were not so numerous as at the 1907 event, but that is not surprising since the club show was held at the Palace last year. The laced varieties were of good quality, but they were lacking in numbers, although the entry of young Gold and Silver pullets was not by any means bad. The two classes for Blue-laced or Buff-laced were about up to the usual; neither variety seems to make much progress. The self colours, Whites and Blacks, were very strong, there being ninety-five of the former and 113 of the latter. Partridges, too, averaged well, but the variety was not particularly well handled by the judge. The Silver Pencilled were not very great, but there was a capital lot of Columbians on view. The Leghorn, Plymouth Rock, and Andalusian Club show was, as usual, a very big section. The Plymouth Rocks hardly came up to expectations as regards numbers, but no fault could be found with the quality. The Leghorns were very good all round, each variety being well supported. The Blues were naturally the centre of attraction, since their points have been under much discussion of late. The entry was certainly a good one in both classes, but there is much room for improvement. The Andalusians were of excellent quality and fairly numerous.

Black Minorcas were again strong, and we question if a better collection has been secured of recent years. The Cockerel and Pullet classes were particularly

fine, and there were very few specimens indeed which did not come well up to standard requirements. The Rose-comb Blacks did not impress us very much, since they reminded us too much of the Black Hamburgh, but they will no doubt be improved with time. A novelty turned up in the two classes for Barred Minorcas, which were quite an "invasion," since the whole of them came from the Fatherland and thereby helped to keep up the international character of the show. The Sussex Club show proved an attractive section, and the advance in the general quality was most marked. Houdans and Faverolles were quite representative, although there was not a big entry of Faverolles Cocks. Of the Hamburgs the Blacks were the strongest, but some grand Spangled and Pencilled of both colours were exhibited. Anconas were quite up to the usual, and the Rose-comb variety appears to be making good headway.

Both the Campine Club and the Redcap Club Shows were fairly good, but neither breed seems to be going very strongly. Indian Game were not too numerous—we have seen better displays of the breed, although those birds exhibited were of very even quality; and the winning cockerel, but for a trace of lacing on the breast, was a grand specimen. The Black Sumatra Game Fowl Club show attracted a nice entry, but we thought the birds were not staged in the grand form we have seen on former occasions, many appearing to have hardly fined down to the lustrous sheen which the breed is capable of carrying. The Aseel were not so numerous as they have been at Palace shows of years gone by, and we were somewhat disappointed in the quality. Malays, on the other hand, were quite good all round, and the hen class stood ahead for quality. Modern Game were numerically weak, five of the ten classes provided being cancelled. Birmingham Show, however, follows so closely on the Palace that exhibitors are not willing to risk their birds being rendered unfit for the more classical Game show.

There was not much competition in Bakies (or Dumpies) and one exhibitor practically had both classes to himself. For some reason the Scots Grey classes were cancelled. One certainly does not often meet the breed at shows south of the Border, but it is customary to see a few at the International. The Yokohama Club show was a fairly good section, and the winning specimens were well up to the quality one desires in this charming breed. There were rather more entries than usual in the Any Other Variety classes, but there was nothing particularly striking in them; a Lakenfelder won in the cock class and a Silver Spangled Hamburgh in that for hens. The Silkie Club show was a very nice collection, and it proved a good draw, visitors being especially interested in the quaint breed.

Of waterfowl there was a good collection, although in some classes the entries were not particularly strong. The quality was of a high order, but we must admit that we have seen a better display at this event. There were no Embden geese on show, both classes being cancelled. In turkeys the White classes were expunged, but the collection of Bronze made up for it, the trophy winning cock being a splendid exhibit.



Maintaining Condition.

The special fattening and other work in preparation for the Christmas market must be additional, and in no measure allowed to interfere with the normal routine care of the laying and breeding stock, otherwise the continuity of production will be broken at an important juncture in the year's work. The looming large of the nearer market must entail no obscuration of the more distant, but equally important; and the fattening of poultry in December must not be at the expense of production for the spring. As the temptation exists, the warning must be given. It is just at this busy period that the stock birds of various descriptions require unrelaxed attention. The hard productive condition which is specially desirable must be maintained by exercise and well-regulated feeding, and the former (and to some extent the latter) will be considerably assisted by the moving of the colony houses to situations giving access to ploughed land. When this is freshly turned, the fowls will benefit from the consumption of worms and larvæ, and there will be some ultimate gain to the future crop for which the land is prepared. Nearer the end of the month, when large numbers of fowls are being killed, the producer for a private trade often undertakes the dressing of the birds, and a large quantity of offal is wasted, a considerable proportion of which might very well be cooked and fed to the laying and breeding stock. This utilisation of an otherwise waste product is of considerable assistance at the latter end of December, when eggs and fertility are required.

Natural Incubation.

With the passing of November the commercial producer turns with more serious intention to the work of incubation, and usually endeavours to set a good number of eggs under hens before Christmas, although there are others who wait until the turn of the year before putting down any considerable quantity. Personally, we are of opinion that there is very little to choose as regards the period at which these chickens reach a marketable size, and that therefore a slightly later date is, as a rule, more favourable to the cost of production; the chief aim of December-January incubation being to produce chickens for a suitable maturity during the latter

half of April and the early part of May, when the highest values of the year are obtainable for birds of a size for fattening. Nevertheless, a sufficiently wide incubating period, including December, is doubtless the safer course if any considerable head of chickens is required for the early trade; and it is just as well to have a few broods out at or about Christmas, every subsequent week of hatching necessitating increased skill in rearing against time in face of adverse circumstances; and the most skilful are sometimes outmatched by the elements. For present incubation and subsequent rearing the chief reliance must be upon sitting hens, artificial methods being requisitioned, when necessary, as auxiliaries, which is not an old-fashioned theoretical opinion, but the concentrated experience of modern commercial production in this country.

Anticipated Results.

There are some old chicken rearers who confess to a superstitious abstention from numbering their running stock, whilst opposite extremists anticipate the market returns of unincubated germs; both are ignorant, but the method of the latter is disastrous. Allowing in due proportion, as is seldom done, for infertiles, dead in shell, accidents, and other possible contingencies, there are very few who are sufficiently well-informed or experienced to make due allowance for the varying periods at which chickens of the same age will attain a marketable maturity. Out of every hundred birds hatched simultaneously and reared successfully to the feathering stage, how many will be fit to fatten—or to kill off the ground—at the same period? The few broods that grow and develop evenly are exceptions, and the commercial producer who does not deal with a few broods, but with batches of fifty or a hundred or more, has long since learnt that a certain proportion "dribble" along to an unequal maturity—the proportion being mostly an unknown quantity, but quite sufficient to upset premature calculations regarding average profit. This is true of the artificially as well as of the naturally reared, although the proportion of laggards is usually smaller in the case of the latter.

Some Differential Factors.

There are several influences tending to disparity in growth and development, of which the following

will indicate the varied origin and character. The vigour of the stock birds will immediately suggest itself as an important factor, and this varies very considerably, being affected by such incidents as season, weather, and age; and it should be obvious that vitality is lowered at the end of a breeding season, or as the result of permanent mating—the latter is a common cause of inequality. The farmer whose fowls are perpetually mated naturally suffers keen disappointment at certain seasons by anticipating results—the fault being primarily his own. Breed and strain are also strongly influential, the rate of growth of the progeny being a commonly-quoted characteristic in this connection; and the average differences are in some cases most marked, as the least observant should know. Other important factors are the character of the feeding and the general method of management, including several details that assist or retard steady progress in the chickens; and the same considerations are referable to the parent stock. The climatic influence has a very direct bearing upon the subject, not only in regard to the condition of the breeding stock, but more directly in connection with the rate of progress of the young; and there are some weather conditions that check growth, despite the suitability of feeding, management, and other factors. The heating and ventilation of houses and appliances very directly affect growth, both in natural and artificial rearing; and the inimical results of overheated or ill-ventilated coops and brooders can scarcely be over-estimated. The overcrowding of half-grown chickens is a frequent cause of arrested, and subsequently stunted, growth. In addition to all these influences there still remains the unknown factor of individual constitution, which (entirely apart from other considerations) serves to emphasise the fact that all birds cannot be depended upon to reach a given stage in a definite time. The extra feeding of a certain unknown percentage is one of the rocks upon which anticipated results are liable to split.

MACHINE CRAMMING— AND AFTER.

By J. W. HURST.

I SAY *machine*-cramming, because for all practical purposes the nozzle and the pump of the mechanical appliance have replaced the funnel and the hand-feeding with pellets; but the use of the modern machine involves greater skill than was required by the older operators in their exercise of the simpler but slower methods. Two great advantages of machine-cramming are that, as the whole meal is injected at one operation, there is considerable saving in time in comparison with even funnel-feeding (the quicker of the two older methods) and the process is less exciting to the fowl; but, on the other hand, the risks of ignorance or carelessness are considerably increased, and there is not only the danger of suffocation by a false passage of the nozzle, but also that of crop-bursting, which is the initial blunder of the novice. Although it is always advisable for the beginner to acquire such practical knowledge as the

operation of a cramming-machine under the direction of an experienced man, it must be recognised that men have taught themselves more difficult arts, and these notes are written in the interest of intelligent tyros who wish to still further improve the weights the birds have themselves attained by trough-feeding.

Although slightly differing in constructive detail, the general principle of the three or four makes of machines in common use is practically the same. The chief parts consist of a large funnel-shaped food receptacle at the apex of a tripod arrangement of legs, the latter shod with wheels to facilitate rapid move-



Machine Cramming.

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ment from pen to pen. From the base of the food receptacle a flexible tube projects, the nozzle of which is inserted in the gullet of the fowl, and the semi-liquid food is forced out of the machine into the crop by the operation of a piston and treadle arrangement. The bird must be so held (firmly against the body) that, whilst it is unable to struggle, there is at the same time every opportunity for the full expansion of the crop, which must be held with one hand in order to determine the point at which the foot must release the lever—the crop being full—and the bird be returned to its coop. That there is a wide difference

in the capacity of crops is a fact to be always remembered, the necessary quantity of food for each fowl being a matter for the judgment of the operator, and entirely independent of the mechanism; the constant recognition of this responsibility, together with the necessity for holding down the tongue during the introduction of the nozzle, and the straightening of the bird's neck, are matters of primary importance. The ingredients of the food mixture should be the same as in trough feeding (Sussex ground oats, mutton fat, and milk), but the consistency must be suited to the free working of the machine—viz., that of fairly thick cream. The process of cramming consists in the repetition of this machine-feeding twice daily until the birds are "ripe" for killing.

This condition of ripeness is another matter involving the recognition of individuality in the fowls, because all birds do not arrive at their nearest approach to perfection with the same rapidity or clock-like regularity, and the determination of the proper time to kill a fowl can only be arrived at by practice. The novice may, however, be to some extent guided in this matter by an examination of the space between the two pieces of cartilaginous substance which approach the vent from the sides of the backbone; if these pieces of cartilage are easily felt, or there is a hollow space between



INTERIOR OF FATTENING SHED,

Mr. Thompson's Farm, Aylesbury.

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them, the bird is not sufficiently fat, but when their position is unascertainable the process has probably proceeded as far as the novice can safely continue it.

Killing should be effected by dislocation of the vertebræ, the head being joined to the neck by a single pivot; this, in conjunction with the coincident obstruction of the normal flow and return of blood to the brain and the stretching of the nervous structures of the neck, is sufficient to produce death, which is, as nearly as possible, instantaneous. External bleeding is not necessary to appearance, but, as there is internal bleeding, the dead bird must be held with the head hanging down during the time of plucking, and the blood will drain into the cavity produced by the dislocation (surrounded by the unbroken skin of the neck) and congeal. It is, of course, generally understood that all fowls must be sufficiently fasted before killing to allow the emptying of the crop and intestines of food. In the operation of killing, the

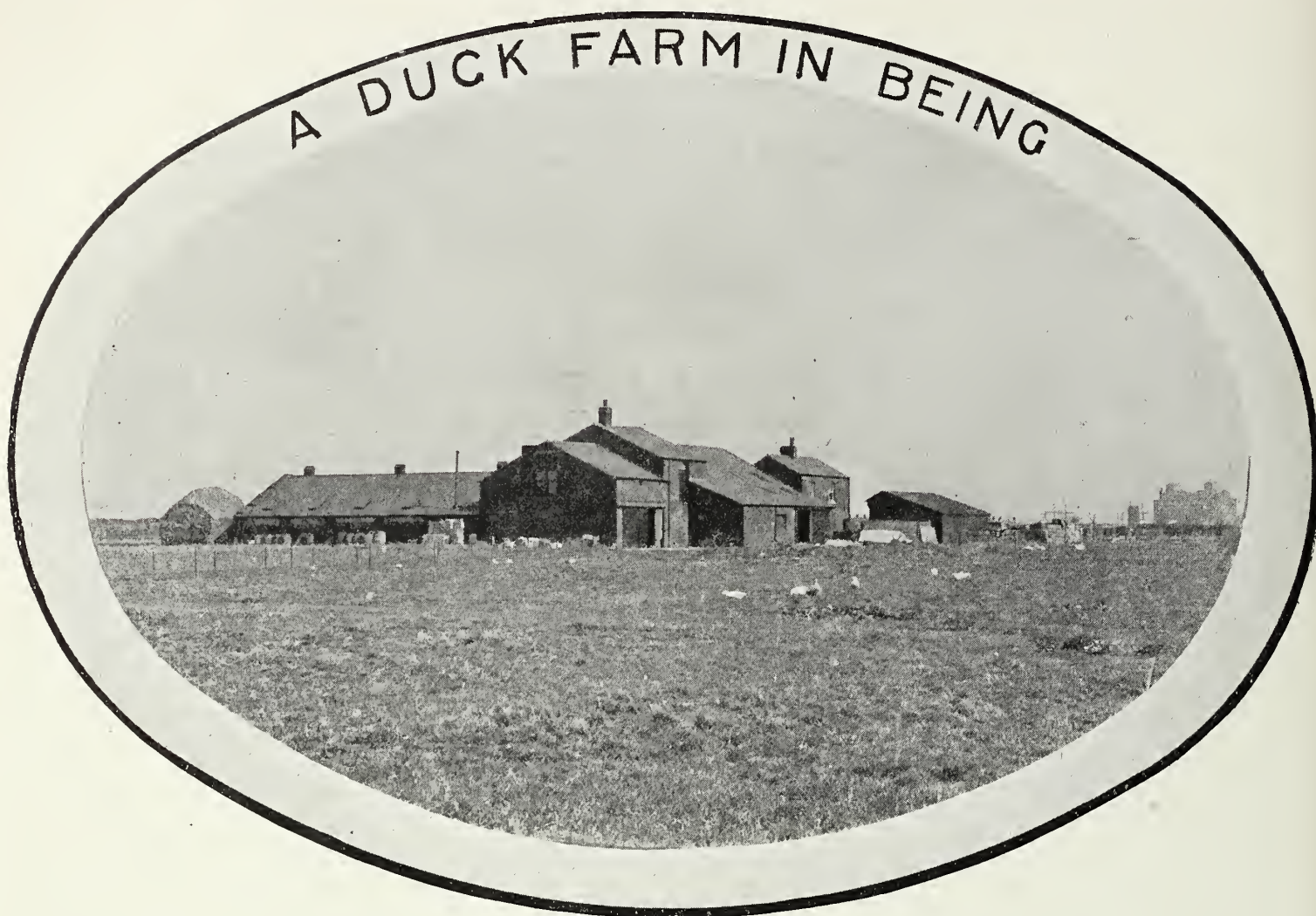
operator, being seated, holds the bird in his left hand by the legs, wings, and tail, with its breast resting across his knees. The right hand, palm downwards and outwards, grasps the head between the first and second fingers at the point where the base of the skull meets the neck, with the comb against the palm of the hand. A quick, steady, outward movement from the wrist forces the head backwards and outwards from the final joint of the vertebræ, and dislocation results. Directly the dislocation is realised the force of the action must cease, or the skin of the neck will be torn.

To ensure the proper drainage of the blood, and to facilitate the drawing of the feathers (which come away easily from the warm body), the man who kills should immediately proceed with the plucking. Relative to the order of plucking, I do not think that written instructions are of any great practical value, a little steady practice soon indicating the best method for the avoidance of torn skin—and the first few birds are almost invariably damaged by the novice; but with experience come confidence and speed. The feathers being all plucked, with the exception of those upon the head and about two-thirds of the neck, the stubs must next be drawn between the thumb and a short blunt knife. The final process consists of tying the hocks lightly

with twine, allowing sufficient length to enable the shanks and feet to be turned up and along the sides of the breast; the birds being then placed breast down upon the inclined shelves of a press, with the sterns hard pressed against the boards at the back and the heads hanging down over the front. A narrow board is then rested along the top of the wings and weighted with bricks.

MR. E. W. RICHARDSON.

We regret to learn that Mr. Richardson, secretary of the Utility Poultry Club, has been very unwell. The strain of managing the recent laying competition must have been very great, and it has evidently told upon him. In fact, during the later weeks, he carried out the work under severe physical disabilities. Everyone will join us in expressing the hope that he may soon be restored to his usual vigour.



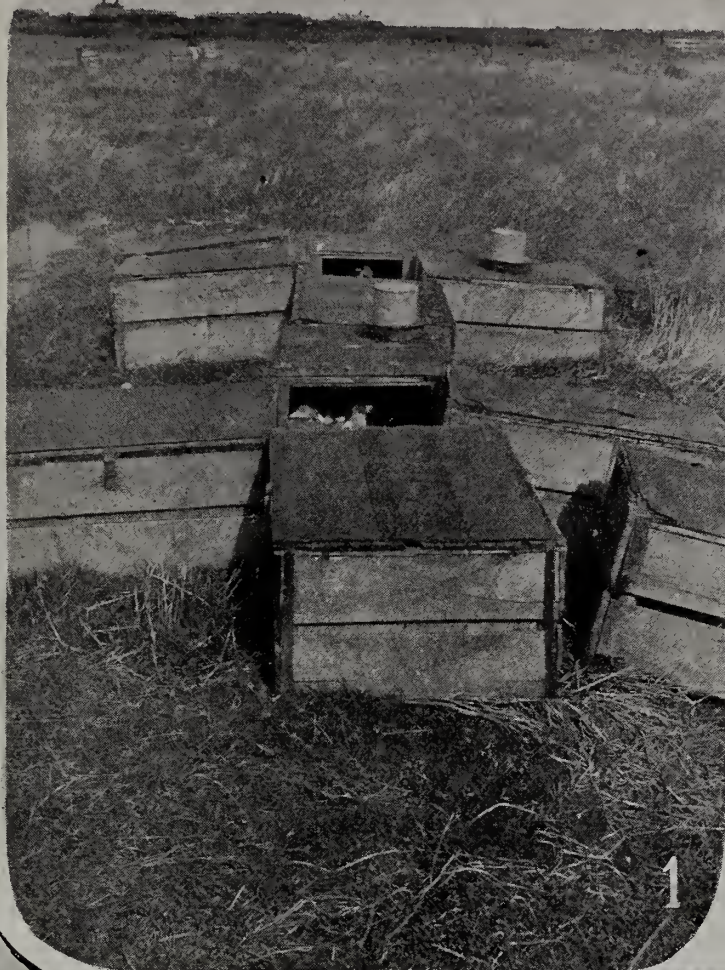
SOME time ago it was stated in one of the leading weekly journals that "no duck farm had been carried on profitably for more than two years." The Broadwater Duck Farm, Fleetwood, is proof to the contrary, for it has been conducted for eighteen years, thirteen of which were on a general farm near Poulton and five at its present location. As to the financial results, they are satisfactory to the owner, Mr. Peter Walsh, who has never sought publicity and who goes on his way regardless of what men think and say. He is a living proof of the possibilities of duck farming, which have at least been recognised by many of the leading opponents of poultry farming. His operations are upon utility lines, pure and simple, for, keeping no breeding stock, he does not add to his returns by sale of stock birds, eggs for hatching, &c. Meat production, first and last, is his object, and his success is entirely due to that. Were the story of this enterprise told in full it would reveal what can be done by determination and persevering efforts, combined with personal attention and hard work.

One of the views given shows the farm buildings, surrounded by twenty-five acres of land, about a mile and a half from Fleetwood town. The soil is a clay loam, slightly undulating, with no shelter, and wind-swept, as it is within sight of the Irish Sea. At times it is none too dry, but that does not appear to be disadvantageous. The buildings are substantial and compact, as will be seen by the general view. Here

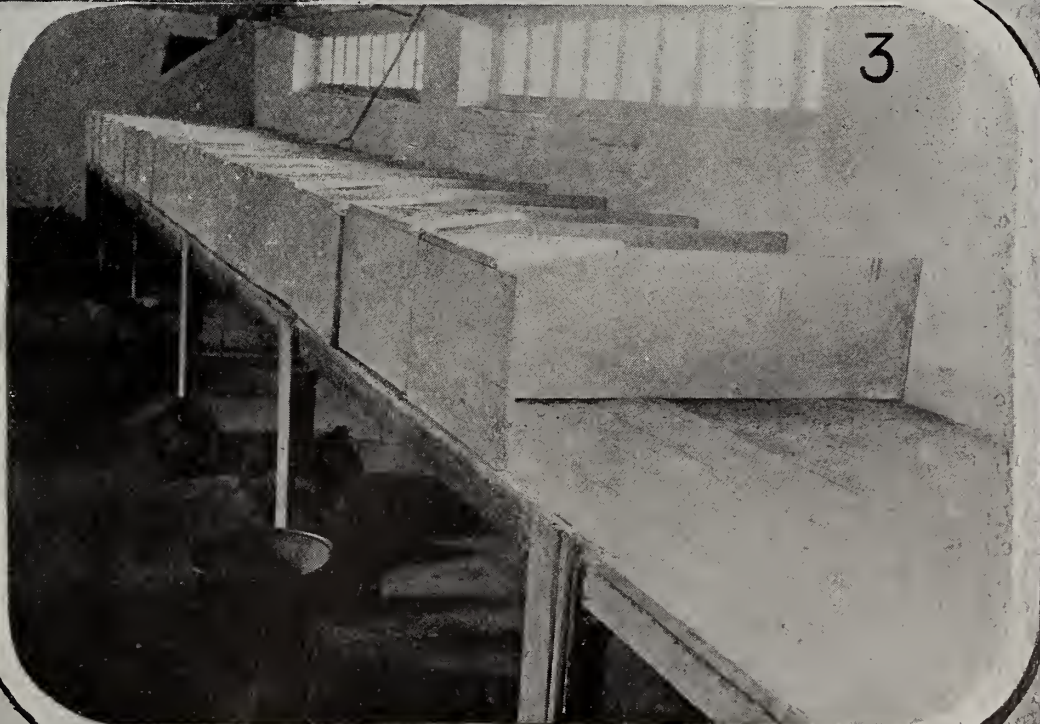
are the offices, incubator rooms, stores, and plucking shed. Everything is of a rigidly practical character, plain and simple almost to a fault. In fact, cheapness, save in the incubator and chilling rooms, rules entirely and not a penny is spent which can be avoided. To many, simplicity is carried to an extreme, and it is a moot question whether the adoption of other methods might not yield better results. But the success achieved is its justification.

It may be explained that no breeding stock is kept upon the farm, thus following the Buckinghamshire example. This, as Mr. Walsh acknowledged, is a source of weakness, as he is unable to control the quality of the birds produced and he has to take the eggs when and where they are obtainable. The advantages, on the other hand, are considerable, in that he has not the care of a huge stock of breeders. To secure the quantity of eggs required 800 drakes and ducks would be needed. During the present year he has purchased 60,000 eggs and hatched 35,000 ducklings. The organisation of this enormous supply needs considerable forethought, and eggs are bought all over the country. Were the eggs produced on the place, efforts might be put forth to improve the quality of the stock and better ducklings obtained. Now they have to be taken just as they are. However, that is not Mr. Walsh's method, and we are recording things as they are.

Hatchings are entirely artificial. For dealing with



- (1) Home-made Brooders
- (2) Fattening Pens
- (3) The first weeks quarters



DUCK-
FARMING
IN
BEING

so large a number of eggs 80 incubators are employed, with a total capacity of 14,000 eggs. These are accommodated in two rooms, a photograph of one of which is given, though it is impossible to obtain a view of the full extent. The machines are closely packed together in rows, with passages between, one of which is shown. In that is seen the benches on which the egg trays rest when the drawers are withdrawn for turning and also the excellent system of ventilation, consisting of sliding shutters below, at each end of every row, and ordinary traps in the roof, so that the current of air is regular and sufficient—an all-important point where operations are on so large a scale. The atmosphere of the room is kept moist by means of wet sand and the eggs are damped after turning, but Mr. Walsh does not regard cooling more than takes place during the turning twice a day as necessary. It is interesting to note that he finds slow fertility and high vitality generally run together, though why that should be so is difficult to determine.

Where operations are conducted on so extensive a scale a natural inquiry is whether any special difficulties have been encountered. With one exception, that is not so. Two years ago a strange and unaccountable epidemic was experienced. Thousands of embryos died in the shell about the nineteenth day. The strange part of the problem is that the epidemic was unknown prior to the time named, and during the last two seasons there has been no return of it, as hatching has been normal. The mystery, therefore, remains unsolved.

When at Poulton Mr. Walsh had a brooder shed in which the ducklings were kept for a week or ten days. That system has now been abandoned. Along one side of the large incubator room is a broad bench, on which are placed L-shaped boards, as seen in the illustration. These fit together, forming sections about 30 in. long by 12 in. wide and 11 in. deep. When dried off the young ducklings are placed in these, 50 to each compartment, and kept there for seven days. No heat is applied, but as the room is warmed by upwards of sixty lamps, that is

found sufficient for the purpose. The bench is covered with peat moss litter and kept clean, and there is accommodation for 92 of these sections; during the busy season at times there are 4,600 active oxygen-respiring ducklings in this building, in addition to more than 60 incubators and 11,000 eggs. It would be an interesting inquiry to work out the figures as to hatching averages, but no trouble is taken to keep records, and the evident success of the system, contravening all recognised hygienic laws as it does, can only be attributed to the skill of the operator—Mr. Walsh himself.

When the birds are seven days old they are removed outside to boxes grouped as seen in another photograph. These are merely cheap packing cases laid upon their sides. The tops are

removed and thus an open square is formed from which the ducklings cannot escape except by going into the boxes themselves. That is a novel plan, especially as no heat is given. The object is to harden them off without undue exposure. When fourteen days old they are put into the open runs seen in the photographs, in each of which boxes are used as houses, and they are never removed until the time has arrived for killing. Lamps are kept burning all night, as it is found that the birds are much



INCUBATOR ROOM, SHOWING SPECIAL VENTILATOR.

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quieter than if entirely in the dark.

As in all stock feeding, the prime question is cost of food. Rise in values of grain and meal means increased cost and lessened profit. Eggs, incubators, and labour all have their influence in the final results, but with heavy eaters like ducks these expenses are only about one-fourth the value of the food consumed. Hence the question is of great importance. Grain which some years ago cost 7s. 9d. per sack is now 16s. Thus cheaper foods have had to be obtained, and Mr. Walsh uses broken biscuits as part of the diet. These are excellent in nutrition. With them scrap meat and green food are mixed, and fish up to six weeks old. When the birds are killed and plucked, they are laid upon metal shaping trays, below which flows iced water, thus exhausting the body heat.

THE WINTER EGG YIELD.

How to Increase the Supply.

THAT it is more profitable to produce eggs during the winter, when they are worth about 2d. or 2½d. each wholesale, than during the spring and summer, when they are worth no more than sixteen or eighteen a shilling, is a point that we need not attempt to prove, for it must be at once evident to anyone who takes the trouble to think the matter out. While this fact is generally admitted, however, comparatively few poultry keepers take particular pains to increase their winter egg yield, being willing apparently to go along the old lines and employ the old methods of managing their birds. We strongly advise any of our readers who have not tried to specialise in winter egg production to do so without loss of time, for there is no more profitable branch of industrial poultry-keeping.

Until within comparatively recent years incubators and brooders were unsatisfactory and unreliable, and it was largely a matter of chance whether the eggs hatched or whether they did not. Nowadays, however, there are several machines that can be confidently recommended, being cheap, trustworthy, and constructed upon a thoroughly commonsense plan. By their means hatching at any and every season of the year is possible, and they perform their work in as satisfactory a manner during the depth of winter as the height of summer. Without employing the artificial methods of hatching and rearing winter eggs cannot be relied upon, for the general purpose varieties, such as the Orpington and Wyandotte, which are our best winter layers, require to be brought out early in the year if they are to lay the following autumn and winter. It is impossible to lay down any hard and fast rule in this respect, but generally speaking an Orpington, a Wyandotte, or a Plymouth Rock requires to be hatched early in March to ensure its laying the following winter. For this purpose, therefore, incubators are necessary, as brooding hens are generally extremely scarce during February and the early part of March. Even when procurable, they are usually so unreliable that it is scarcely safe to trust them with valuable eggs.

As would be naturally expected, the feeding of the laying stock plays a very important part in the production of winter eggs. A mistake that many poultry keepers are guilty of is that they use the same foods in the same proportion and prepared in the same manner throughout the twelve months, either ignorant or neglectful of the fact that to ensure the most satisfactory results it is necessary to vary the foods according to the seasons. What may be an admirable food during hot weather is totally unsuitable during the winter, and vice versa. On winter mornings the hens should receive some warm mash, consisting of meals, together with any household scraps there may be; a good mixture for this purpose is two parts barley meal, one middlings, and during very cold weather half a part maize, mixed with the household scraps. At mid-day, fowls in confinement, or during cold weather, should receive some green food, such as cabbage leaves, the tops of Brussels

sprouts, and lettuce leaves. Green food is necessary to the health and well-being of the birds, as it keeps the blood cool and the organs in good working order. In the afternoon a little grain should be given, preferably wheat, barley, or oats. Natural foods, such as worms, grubs, insects, &c., are a valuable addition to the daily menu and assist egg production very materially. Upon a soil rich in animal and vegetable life healthy and vigorous birds are able almost to support themselves; at any rate, they can do with much less artificial food, thus reducing the food bill very considerably.

There is probably no more frequent cause of a small egg supply than that of the hens being in too fat a condition, and we think it is no exaggeration to say that fully 50 per cent. of the laying hens in this country are too fat. The necessity for liberally supplying laying hens with foods of a nourishing nature has been so often emphasised that many poultry keepers are inclined to overfeed, under the mistaken impression that the more food the birds receive the more eggs do they lay. This is, however, by no means the case, and it is a grave error to feed too liberally or upon too stimulating foods. There is no better method of keeping laying hens in a lean, hard condition, than encouraging them to take plenty of exercise. This is not always an easy matter during the winter months, and there are many days when the birds are better under cover. A scratching shed attached to the sleeping compartment is a great boon, as then, no matter how rough or inclement the weather may be, there is always a place in which the hens can obtain exercise—so important a factor towards success. The floor of this scratching shed should be covered with straw or chaff to the depth of several inches, and the grain should always be scattered there among. This gives the birds a good deal of work in scratching for their food, and they soon learn to appreciate the fact that if they work not neither do they eat.

A very common cause of a small egg supply is that the laying stock is too old. The ordinary class of hen does not pay for her keep after she is two years old, and birds older than this should be disposed of. Exhaustive experiments have proved that a hen is in her prime during her first and second seasons, after which time she ceases to be profitable. Young birds, that is two years or under, should only be relied upon for the winter egg supply. On no account should the laying stock be overcrowded, as when this is the case it is next to impossible to secure a good supply of eggs. Especially is this so during the winter, when the fowls have to be shut up in their houses for so many hours at a stretch, and it is evident that if the air is vitiated the best results cannot be achieved. As far as possible, each bird should be allowed two square feet of floor space in an ordinary closed-in house; when the open fronted form is used, two-thirds of this amount is sufficient. Closely allied to the question of overcrowding is that of ventilation, and there should always be some arrangement whereby the vitiated air can pass quickly away, allowing fresh to take its place.

Readers are requested to mention THE ILLUSTRATED POULTRY RECORD when replying to advertisements.

GOOSE FATTENING—ANCIENT AND MODERN.

THE system of fattening geese is very ancient. It was practised by the Egyptians four thousand years ago, as indicated by the tablets in the tomb of Tighe, and in Italy during the period of the Empire. Of the methods then adopted the accounts are very incomplete. We are compelled, therefore, to confine ourselves to later periods, and below give extracts from various sources.

Seventeenth Century Methods.

The *English Husbandman*, written by Gervase Markham, was published in 1615, and is noteworthy in that it is one of the earliest books dealing practically with poultry in relation to agriculture. In a quaint manner it describes the system of fattening geese followed at that period—that is, three hundred years ago :

After a gosling is a month or six weeks old you may put it up to feed for a greene Goose, and it will be perfectly fed in another month following: and to feed them there is no meat better than slegge Oates, boyl'd and given plenty thereof twice a day, Morning, Noone and Night, with good store of Milke or Milke and Water to drinke. . . . Now for the fattening of elder Geese which are those which are five or six months old, you shall understand that after they have been in the stubble fields, and during the time of harvest got into good flesh, you shall then chuse out such Geese as you will feede, and put them in severall pennes which are close and dark, and there feede them thrice a day with good store of Oates, or spelted Beannes, and give them to drinke water and barley-meale mixt together, which must evermore stand before them; this will in three weekes feede a Goose so fatte as it is needful.

In a work entitled *Systema Agriculturae; the Mystery of Husbandry Discovered*, Published for the Common Good: by J. W. Gent, in 1675, the following account is given :

The Young or Green Geese are best fatted, if kept dark, and fed with ground malt and milk mixed together.

But in fatting of Geese you may observe that they usually sit, especially in the night time, with their Beaks or Bills on their Rumps, where they suck out most of their moisture and fatness at a small bunch of feathers, which you shall finde standing upright on their rumps, always moist; which if put away close before you put them up for fatting, they will be fat in much less time, and with much less Meat than otherwise.

They will feed on, and fatten also with Carrots cut small, and given them.

The Jews, who are esteemed the skilfullest feeders that be, do wrap the Goose in a Linnen Apron: they hang her up in a dark place, stopping her Ears with Pease, or some other thing, that by neither hearing nor seeing of anything, she be not forced to struggle nore cry. After they give her pellets of Ground-malt or Barley, steeped in water thrice a day, setting by them water and gravel; by which manner of feeding they make them so fat that it is almost incredible.

Moubray's System.

Bonnington Moubray's *Treatise on Domestic Poultry* was first published in 1815. After describing the method of feeding goslings on the stubble and by corn and green food, he goes on to tell how to bring the birds into fat condition :

Geese managed on the above mode will be speedily fattened green, that is, at a month or six weeks old, or after the run of the corn stubbles. Two or three weeks after the latter must be sufficient to make them thoroughly fat; indeed, I prefer a goose fattened entirely in the stubbles, granting it to have been previously in good case, and to be full fed in the field; since an over-fattened goose is too much in the oil-cake and grease-tub style to admit even the ideas of delicacy, tender firmness, or true flavour. But when needful to fatten them, the feeding houses already recommended are most convenient. With clean and renewed beds of straw, plenty of clean water, and upon oats crushed or otherwise, pea or bean meal, the latter, however coarse, or ordinary food, or pollard; the articles mixed up with skim milk when to be obtained, geese will fatten pleasantly and speedily. I know nothing of the imposthume said by our elders to grow upon the rump of the feeding goose, and through which she perpetually, like a bear, sucks her own fat, and which thence must needs be expected.

Present-day Goose Fattening.

An exhaustive article by Mr. Edward Brown, F.L.S., appeared in the *Journal of the Royal Agricultural Society* for 1899, dealing with "Geese and Geese-breeding," from which we cull the following paragraph treating upon the final finishing of the produce :

During the last three weeks the geese should be confined in sheds or pens, about twenty or twenty-five in a batch. The place selected for this purpose should be roomy and be well ventilated, but must not be very cold or subject to great variations of temperature, or the flesh development will be retarded considerably. An excellent plan is to have a range of pens, each with an open forecourt, either around three or four sides of a square, or along one side, and to allow each batch out in turn for feeding, during which time the pens can be cleaned out. The advantage of the square arrangement is that they are more sheltered from wind and rain. Each batch should be killed at the same time, and thus it is better, when putting up, to grade according to the respective sizes of the various specimens. If a few are taken out of a batch those remaining are liable to fret and lose flesh. For feeding off the grains most suitable are oats, either whole or crushed. Barley meal, mixed with brewers' grains and potatoes, are excellent for this purpose, but oats steeped or simply thrown into water, produce the finest quality of flesh, possessing firmness without hardness. Beans and peas should be avoided as they make the flesh hard. Indian corn is frequently employed, either whole or ground, and there can be no question that it gives weight and bulk, but the result is unsatisfactory, in that the body and intestines are charged with a large amount of yellow, oily fat, which runs away into the dripping tin when the bird is cooked. Moreover, the appearance of a maize-fed specimen is never so pleasing as when oats are employed.

The Way Followed in America.

The annual report of the Rhode Island Experiment Station at Kingston for 1897 contains a large amount of information respecting the goose industry in that country, and thus explains the system adopted by those who prepare these birds for the fall markets:

Geese for fattening should be penned upon high, gravelly soil, or land that will not become muddy in wet weather. A pen for fifty geese should be perhaps 40 ft. or more square, and should be bare of green crops, and provided with some shelter from the sun. A good shelter may be made by putting four crotched posts in the ground, upon which rails can be laid covered with white birches or boards. These may be fastened down so that a high wind will not blow them off or injure the geese in the pen. A wire fence, four or six feet high, is suitable for the sides of the pen. In fattening goslings during the warm weather of summer, provision should be made for as much air as possible. If the weather is warm they eat less, and consequently fatten more slowly. When the weather is cool they fatten more rapidly. When penned for fattening they may be fed for one or two days quite moderately, in a way to prepare them for the regular fattening ration. During this time they can have a little green food and such grain food as they have been accustomed to. For fattening they should be fed upon scalded dough, made from Indian corn meal and sweet beef scraps. Water should be provided in pails or buckets, giving them a fresh supply three times daily, but only sufficient for them to drink, and not enough for them to attempt to bathe, as water spilled around the pen is apt to make the ground muddy, and any unnecessary exercise is a hindrance to fattening. It is better to have two pails each half full of water than one filled to the top. Goslings can then only get water for drinking, which is all that is desired. Care should be taken that the scalded food is always sweet, and does not stand long enough to become sour and unwholesome. The corn meal and the beef scraps should be of the very best quality, and mixed in the proportion of one part of scraps to four parts of meal, by measure, and a little salt should be added, just enough to season it, care being taken not to use too much. . . . Feed in the morning what dough the goslings will eat up in an hour after feeding. At noon feed whole corn in the same way, but at night a considerably larger quantity of dough can be given them, as they will eat more sometimes during the night, when the weather is cooler, than during the whole day. A little powdered charcoal should be mixed with the dough about twice a week. . . . No green food is given after the first day or two. They should have a constant supply of gravel, crushed oyster shells, and broken charcoal. The latter is especially desirable on the score of health, and it is also thought to assist in obtaining a white fat. Decayed stumps, or partially rotted wood, are greedily eaten by geese when fattening, and a moderate supply seems to do them good. It requires usually seventeen to twenty days' steady feeding to fatten goslings.

French Experience.

A recent work entitled *La Basse Cour*, par L. J. Troncet et E. Tainturier, published by the Librairie Larousse of Paris, deals also with the fattening of geese, and with the subjoined translation we close our symposium on this subject:

Fattening of geese takes place from September to November, with those birds which have already attained sufficient development.

Commencement is made at first by giving additional food consisting of oats, buckwheat, or peas; then, after a week, whilst the birds are good in flesh though not very plump, they are placed in quiet and restricted runs, or are enclosed in boxes, or in fattening pens.

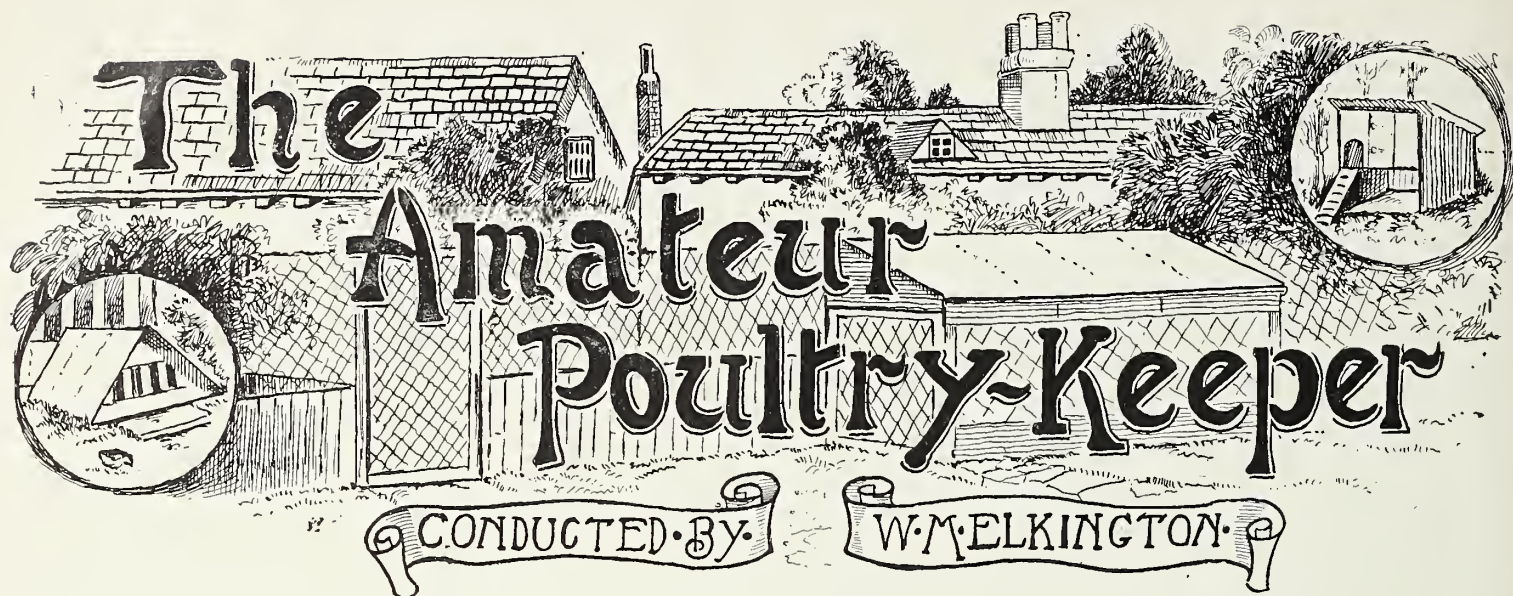
The system here indicated is sufficient to bring the geese to a state of suitable fatness, but in the countries where they have in view the production of foie gras, the procedure is altogether different.

At Toulouse cramming is adopted by means of a funnel, morning and evening, with maize until they are quite full. Thirty litres (27 quarts) of this grain is sufficient ordinarily to fatten a goose to the weight of 10 kilogrammes (22½ lb.), and the operation does not exceed a month

It must not be thought that maize is the only food employed to obtain a fat goose. Potatoes, meals, oily grains, beetle nuts, walnuts, and flax seeds are all used for the purpose. Some feeders add a spoonful of oil for each bird every time of feeding.

SHELTER FOR LAYING STOCK.

AN important matter, and one that ought to be given attention to if winter eggs are to be plentiful, is the provision of shelter for the laying flocks in the field, but where, as is usually the case, stock are running over the same land, this is often no easy task, because sheep and cattle are very destructive of temporary erections, and the question of expense in erecting solid structures has to be considered. One way to meet the difficulty can be found by using hurdles, either wattled (which, though more expensive, save labour and are always ready for use) or covered with gorse, and securing these firmly to strong stakes driven into the ground, forming an enclosure within which the fowls can take scratching exercise and get ample shelter from cold winds and wet, yet plenty of fresh air. By using three hurdles for the back, two each for the sides, and two for the front, which should face due south (having the opening nearest the east side), a large number of fowls can find shelter. The roof can be constructed either of similar hurdles laid flat and secured firmly to the sides, or of strong unbleached calico that has been thoroughly saturated in boiling linseed oil and then dried. This latter has the advantage of being both rainproof and semi-translucent, but in that case the roof must be given a slight fall to run off rain. Strips of wood should be nailed across to prevent stripping by the wind. The scratching material can be of dried leaves, as offering no temptation to cattle, and a few boards nailed at intervals across the opening will keep the material from being scratched out and stock from trying to enter, though the fowls can get through. Such a shelter costs little but the labour involved, which is not great, as hurdles are to be found on most farms, and no damage is done to them by use in this way. The same shelter turned to the north is equally useful for shade in summer. A little corn thrown among the leaves will keep the fowls busy and warm during the worst weather, rye being especially good for the purpose, on account of its small size, but occasional grains of maize will do no harm and are eagerly hunted for by the fowls.



What to Keep.

One is often asked the question whether, putting fancy considerations on one side, a mongrel hen is not just as good as a pure-bred when it comes to business, and it is difficult to make amateurs realise the importance of strain. But, as a general rule, the answer I give to the above question is that, if you take no particular interest in poultry, a mongrel hen is likely to suit you just as well as any other; but, on the other hand, if you are taking up poultry-keeping with any enthusiasm, you will never be satisfied with a mongrel. When I write of mongrels I do not necessarily include crossbreds, of which there are two classes, the chance crossbreds and those that have been produced for a definite purpose. The former quickly degenerate into mongrels, but the properly bred crossbreds are in many cases among the best of utility fowls. But, judging between the pure-breds and the actual mongrels, there can be no doubt which is the more likely to satisfy the amateur. There are greater possibilities with pure-bred fowls, for by taking an interest in the standard points of a breed many people have been led into a successful career as exhibition breeders. Further, there is the great advantage in keeping pure-bred fowls that one is able to sell a number of eggs for sitting at prices considerably above the market value, whilst other arguments in favour of pure-bred fowls for utility purposes are (1) the existence of well-cultivated strains, and (2) the satisfaction in having a flock of fowls that are worth looking at, which naturally adds zest to one's hobby.

How Flocks Degenerate.

It is impossible to keep a flock of poultry up to a given standard unless care is taken in selecting stock for breeding, and whilst it is possible to increase the productiveness of a strain in this manner it is the most natural thing in the world for a flock to become degenerate when no such care is taken. Here is the case in a nutshell: Suppose you take a dozen hens indiscriminately from any flock, and keep a careful count

of the eggs laid by each bird during twelve months. There will probably be not more than half a dozen hens among them, which you would describe as good layers, and the others will be indifferent or bad. Thus you will understand that if you were to breed from the whole of those hens you would perpetuate good, bad, and indifferent together, whereas by selecting the half dozen good hens as your breeding stock you would raise a far higher percentage of satisfactory layers. This rule is as important to the poultry keeper who keeps only a few hens in a back yard as it is to the large breeder, for when one's space is limited it is utter waste to stock it with inferior birds when better ones might be had by following this simple method of selecting the best for breeding.

Unrelated Cockerels.

The amateur who is breeding for general purposes will keep on the safe side by introducing frequent changes of blood into his stock. The fancier must in-breed in order to fix the elusive external characteristics, but the chief point for the amateur utilitarian is to preserve vigour, and that he can do best by introducing unrelated cockerels every year. This, however, is a more important matter than most people realise, for when one possesses a strain of good layers much of their usefulness may be sacrificed by bringing in blood from an inferior strain. Thus it is a penny-wise-and-pound-foolish policy to buy the cheapest cockerel obtainable, no matter where it comes from and what its origin. Even if you only keep a few hens and intend to hatch less than a score of chickens, it will pay you to secure a cockerel from a genuine utility breeder who is making a speciality of laying strains, for upon the breeding will depend the productiveness of next season's pullets.

When to Hatch.

The present may seem to many amateurs an unseasonable time to think about hatching. On the contrary, it is not a day too soon to consider the arrangements for next season, and I am afraid that many late chickens that fail to come into profit until the

winter is over can be traced to delay in considering this important matter. The exhibition breeder, of course, must hatch as early in the season as he can obtain fertile eggs, and the same may be said for those who intend to produce table chickens. But the average amateur, who breeds pullets for laying and kills off the cockerels as they become fit, will find the period between the middle of February and the middle of April the best time for hatching. He must take into consideration the class of fowls he keeps, for the heavybirds of the Orpington type take longer to develop than those of the lighter Leghorn type, and he must also consider the means and accommodation he has

amateur fanciers and beginners can belong. A year or two ago an Amateurs' League was formed, but it failed to gain sufficient support, no doubt owing to the fact that it adopted unpopular methods; and it has since been dissolved. I am, however, strongly of opinion that every amateur fancier would do well to become a member of the specialist club which caters for his breed. The majority of these clubs nowadays offer special encouragement to amateurs, or novices as they style them, and there are many advantages in membership, not the least being the facilities provided for coming in contact with the leading breeders, for nothing can stimulate the enthusiasm of an



POULTRY IN A GARDEN.

[Copyright.]

or rearing young stock, for pullets that have the advantage of a good range and are well cared for will come into profit some weeks earlier than those that have been kept all their lives in close confinement. If fertile eggs and broody hens can be obtained, there is no reason why amateurs should not set a few eggs early in February in order to produce autumn layers, and with this object in view it is desirable to get breeding stock together without delay. It is very unsatisfactory to leave breeding operations until the warm weather comes in April and May, and it is because so many people prefer to do this that winter laying pullets are so rare in amateurs' yards.

Clubs for Amateurs.

I have been asked if there is any club to which

amateur more than the feeling that he is in the thick of the fight for honours.

Commencing Fancy Poultry-Keeping.

(Reply to "Ethero.")

There is a chance for everyone, and perhaps you may find some encouragement in the fact that many of the leading breeders of the present day were once in the same position as yourself. If you have a taste for fancy breeding, we see no reason why you should not indulge it, though so far as the result is concerned so much depends upon yourself, and in a measure upon the luck you experience, that we are not prepared to promise anything. Certainly, we cannot undertake that you will find your hobby a profitable one from the outset. There are some fanciers who have attained fame and fortune by years of hard

work, and others by judicious investment in stock, but it is the latter class who are most numerous just now, and we think that if you are ambitious to reach the top of the tree you will need to spend money freely. That, however, may be looking a little too far ahead, for we should not be justified in advising you to purchase expensive stock until you know how to manage it. You will, therefore, have to start in a small way, and naturally you may find the expense heavy and the returns small at first, for unless you have extra good luck you cannot expect to win many prizes or realise high prices for your stock. But one has to pay for early experience in some shape or form, and it is better to practise one's apprentice hand on inferior birds than valuable high-class specimens. In making choice of a breed, a would-be fancier should study his tastes to a large extent, though consideration should also be given to the popularity of a breed, as well as to its suitability under the circumstances. Minorcas are fairly popular, and, as you have a fancy for them, by all means take them up. The pullets invariably make good layers, even if they do not turn out to be show birds, and that is more than one can say of some breeds. Buying eggs for hatching is all very well as an investment, but we do not consider it a very safe plan for making a start in the fancy, because the results from a sitting of eggs are so very uncertain. You might buy one or two

sittings from a well-known breeder by way of experiment, and if you hatched a winner so much the better. But it is extremely uncertain whether you would be able to mate up a breeding from them, and the safest plan would be to purchase next autumn a small breeding-pen of good birds that will breed you something worth showing. It is against our rules to publicly recommend any particular breeders, but we hope you will see some announcements of Minorca fanciers in our advertisement columns; and, if you are not able to make a selection, we shall always be pleased to assist our readers with confidential advice on such matters. It is people who do things well who succeed in the fancy, for there is such a lot of work and detail in getting birds into condition for the shows and in carrying out the principles of breeding that careless people have very little chance of success. Still, even the most willing may fail until they know how to do things, and that knowledge they can only gain by study and experience. You must go to a few shows and compare your own with other people's birds, find out where yours fail, and note how the best specimens are got up for the show pen, and then you cannot fail to make progress. We wish you success, and thank you very much for your kind and complimentary remarks. The more readers we can assist with advice the better we shall be pleased.



GEESSE AND FOWLS IN A JERSEY MEADOW.

[Copyright.]

THE ORNAMENTAL PROPERTIES OF PURE-BRED POULTRY.

By W. M. ELKINGTON.

POULTRY-KEEPING as a country-house hobby is finding favour in all parts of the country, and the ornamental possibilities of a flock of fowls running in a park or paddock are being realised by many people to whom the mere material advantage of poultry-keeping would not appeal with such force. A short time ago I was present at a show that was opened by the wife of a well-known public man (it was presumably her first visit to a poultry show), and it came to my knowledge that she was so fascinated by the White Wyandottes that she gave an order to a large breeder for ten pullets and a cockerel to run in her park. The beauty of these birds appealed to her, whose ideas regarding poultry had probably up to that time been based upon the degenerate mongrel type one sees running about the roadsides, which, whether they may be useful or not, are certainly not ornamental. Judging from this case, one might surmise that if the general public attended more shows and saw the beautiful varieties that are bred at the present day, there would be more pure-bred fowls kept for ornamental purposes.

Ten or a dozen years ago one seldom saw flocks of poultry running about private parks and country-house grounds, for at that time the ornamental properties of the pure-bred fowl were scarcely realised. Flocks of mongrels or cross-breds were generally relegated to the farm premises. They were not nice to look at, and they lacked the classy character of the pure-breds, so that very few people would permit them to occupy a position where they might be seen. Now, however, the pure-bred hen is coming into her own, and, with the development of rural industries her beauty is entitling her to be considered as part of the scheme for the beautifying of the estate. Not long ago I saw a pretty little country home standing in a miniature park in which were several ornamental white-painted poultry-houses, each tenanted by a flock of beautiful white fowls. Passers-by stopped to comment upon the charming effect, and I have no doubt many have formed plans for adopting some such scheme. White fowls are undoubtedly very beautiful when the setting of green park and trees is as charming as it was in this case, and there is no better variety than the White Wyandotte, whose plumage is relieved by the red face and yellow legs. There are, however, many other colours with which good effects can be created, and it is remarkable how well black fowls look when running upon grass. There is nothing sombre, for instance, about a flock of Black Leghorns, whose large red combs, white lobes, and yellow shanks provide such good contrasts, and for my part I should choose these before any of the black-plumaged fowls. A flock of Minorcas, however, is always striking, and both these and the Leghorns possess one great advantage over the whites in that, whilst the latter may become dirty in bad weather, nothing seems to alter the appearance of the black-plumaged birds.

Then there are many brighter-coloured breeds, prominent among which one may mention the Partridge Wyandotte and the Brown Leghorn. A rich-coloured cock of the former variety is one of the most handsome birds in the poultry yard, and though the hens, seen at a distance, are of a more sober colour, they are particularly handsome when running on grass. Brown Leghorns have an additional attraction in the form of a large red comb. Black-Red Old English Game may be included in the same class, but in each case the males are more ornamental than the hens.

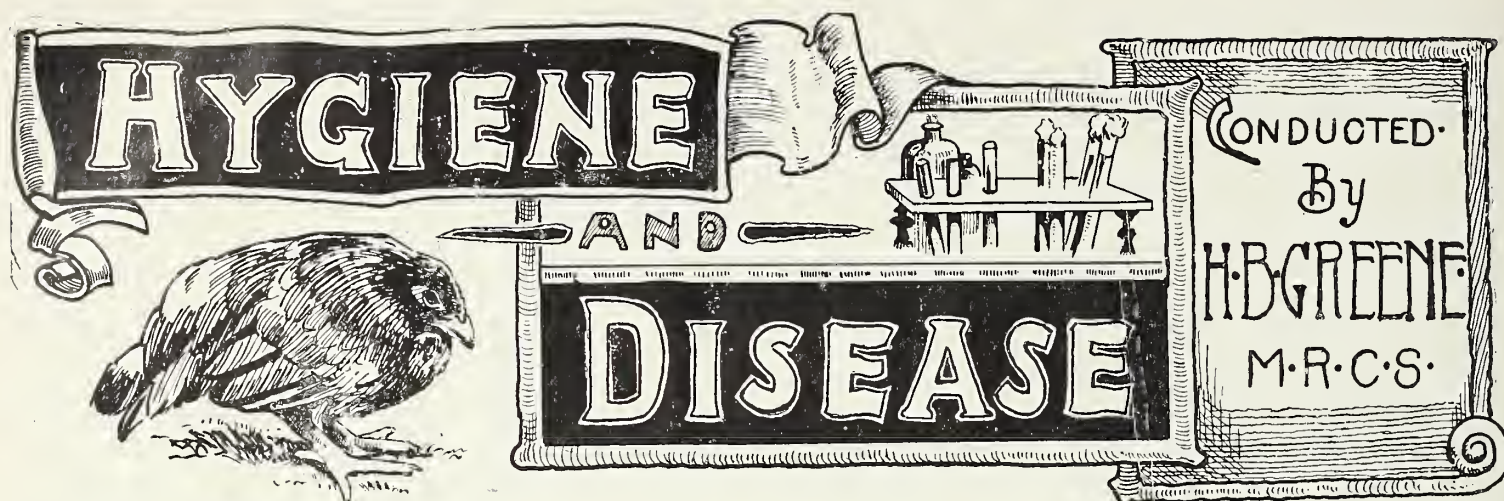
One of the most pleasing effects I ever saw was produced by a flock of Silver-pencilled Wyandotte cockerels, a variety that would, I am sure, be more popular for ornamental purposes if it were better known. A prominent breeder had a pen of these birds in the Irish Village at the White City, where they attracted much attention, and though once again the males are far more handsome than the hens, a flock of pullets running with one or two cocks would give a very pleasing effect. Nor can one ignore the claims of Silver-laced Wyandottes and Barred Plymouth Rocks, two highly ornamental breeds which always look well when running on grass.

There has always been a large measure of popularity for buff breeds, and Buff Orpingtons in particular, and up till the last year or two there were probably more birds of this variety kept for ornamental purposes than any other. A rich coloured Buff Orpington, Buff Rock, or Buff Leghorn makes a fine picture, but a great drawback is the tendency to fade during the summer time, which considerably detracts from the beauty of the birds.

In a large park or field the best effects are produced by allowing the birds to run at liberty, the houses being placed as far apart as space will allow, and by this plan it is possible to keep two or three breeds without intermixing. In a smaller enclosure the number of birds must be limited if they are to run at liberty, or wired runs must be erected to confine them. One plan that I have seen in operation in a four-acre paddock is to have about half a dozen houses dotted about, to each of which is attached an ornamental fence of wire hurdles enclosing about 225 square yards of ground, and each flock is allowed to run at liberty in turn for the whole or part of a day.

It naturally follows that where fowls are kept primarily or partly for ornamental purposes the houses and fences must be in keeping, and though the actual formation of the house is not of such great importance, the painting makes a great difference. For both white and black fowls a white house is the most pleasing, and I remember once seeing a very good effect produced by a house painted white and picked out with black, the inmates, appropriately enough, being Silver Wyandottes. Bright-coloured houses are apt to jar somewhat upon the artistic sense and, personally, I prefer to stick to white or a serviceable walnut brown for any breed.

We hope our readers will remember how extremely pleased we are to assist them, and that our knowledge and experience are at all times available.



POST-MORTEM EXAMINATIONS.

We have made arrangements by which post-mortem examinations of poultry and game can be effected for our readers upon the following conditions:

1. *The specimen is to be forwarded postage or carriage paid and securely packed to "Biologist," 297, Trinity Road, Wandsworth Common, London, S.W.*
2. *The fee of 2s. 6d. (stamps will not be accepted) must be remitted with each specimen and a letter giving particulars of feeding and housing, or any symptoms which were observed before death.*
3. *Birds should on no account be addressed to the office of the paper. If forwarded there they will be returned to the sender.*

It is recommended that specimens be despatched by parcels post where practicable and as soon after death as possible. A reply will be received by letter, defining the disease, its cause, treatment, and prevention.

Ptomaine Poisoning in Ducklings.

It is a noteworthy fact that waterfowl, and perhaps domestic ducklings more than other varieties, seem, as compared with fowls and chickens, particularly liable to sudden death. One reason for this is that sunstroke and heatstroke destroy numbers every season. By nature unable to endure a high temperature, ducklings are often left much exposed to sun by day or overcrowded by night. But another reason for the frequency of sudden death among ducklings is met with in ptomaine poisoning, by which is meant a form of blood-poisoning set up by certain chemical products (ptomaines) circulating in that fluid as a result of decomposed food. Ducks are proverbially dirty eaters, and under conditions of domestication they find garbage in abundance. The refuse of a dustbin and a warm summer combined will work havoc in an afternoon, and I have recently met with an instance of the loss of five fine young ducks by ptomaine poisoning through eating shrimps which had been thrown away as bad. Another more serious case was submitted to me earlier in the year, where a duck breeder had sustained a loss of more than four hundred ducklings in a very short time from this form of poisoning. It transpired that boiled blood was included in the food, an article of commerce which has become fashionable among rearers of late, but one not to be commended, however cheap it may seem, on account of its instability and tendency to septic changes.

Impaction of the Gizzard.

The accident known as impaction or stoppage of the crop is one often met with by poultry of all kinds, and is familiar to nearly everyone who has tended them. The substance obstructing the lower outlet of the sac may be anything from a large grain of maize to a good-sized stone; but the mishap more commonly takes place without any plugging whatever of the outlet, simply through over-distension with grass fibre or a too bulky meal. The thin muscle fibres that form the crop walls, at no time very strong, are powerless to contract upon and force onwards the bulging contents. Impaction of the gizzard, on the other hand, is not nearly so frequent, and its presence is seldom suspected in the living bird, since the ailment is accompanied by no symptoms that specially mark it out. But this fact is tolerably certain. Impaction of the gizzard is almost invariably preceded by a diet into which to a large extent husky grain, such as inferior oats or coarse barley, enters. It is remarkable that while few substances that ever arrive at that organ escape complete maceration or expulsion when they come under the influence of its dense and massive muscular coats, the one material that successfully defies their grinding power should be the soft, pliable husk of grain. But such is often the case—indeed, the flimsy nature of chaff constitutes its chief danger; for it would appear that when the grain is ground out of the husk, emulsified and pushed on, the shells of chaff remaining behind are too light for the gizzard to get a grip of, and gradually get rolled up into a ball, like the hairballs found in cattle, until the cavity comes to be packed in its entirety with matted chaff and incapable of receiving the food passed on from above. A fowl recently sent by one of our readers, with a request for its *post-mortem* examination, proved of much interest as regards the direct and indirect causes of its death. The diet of this bird had been composed very largely of oats, barley, and crushed oats. The appearances found were a crop tolerably but not excessively full, a gizzard completely distended by a ball of shredded husk, and below were empty intestines. Just where it joined the gizzard the small intestine had been torn away for half its circumference, and a clot of blood the size of a florin gave evidence of internal bleeding. In this fowl the chaff-ball had

increased in size until no room was left for grain or grit to enter. Meanwhile the muscles of the gizzard continued to labour to such purpose that at the climax of a contraction the body of the organ was actually torn away in part at its junction with the intestine, while the chaff-ball remained unmoved! The case illustrates the unsuitability of a husky diet for poultry, and at the same time demonstrates how great is the muscle force exerted by the contraction of a fowl's gizzard.

Wet Poultry Runs.

If we consider that the normal blood heat of a laying hen is 107° F., a temperature that is incompatible with the continuance of human life and about seven degrees higher than that of man, it is not surprising to find that external conditions which suddenly reduce such a temperature subject poultry to the attacks of many diseases, and those by no means confined to the organs of respiration. The famous French savant, Pasteur, when investigating anthrax (splenic fever), was at first puzzled by the fact that whereas animals like the rabbit, horse, sheep, and pig, as well as man, proved susceptible to this terrible malady, the domestic hen seemed proof against even the inoculated virus. It then occurred to him that the difference in the blood temperature might account for this immunity. Accordingly he immersed the feet and legs of a fowl in iced water, thereby reducing its temperature by four or five degrees to the level of that of the other animals. The hen was then at once inoculated, and the disease developed! We can therefore understand how wet ground, be it an enclosed run or an ill-drained range of grass, is a most prolific predisposing cause of catarrh, pneumonia, ovarian congestion, and other poultry ailments. Many well-meaning people are every day unconsciously repeating Pasteur's experiment by allowing their poultry to paddle about in marshy ground or muddy runs and at the same time curtailing their profits by eggs, for the first requisite for laying stock is dry ground.

MOLLUSCUM CONTAGIOSUM : A SKIN DISEASE OF POULTRY.

By H. B. GREENE, M.R.C.S.

THE diseases of the skin that are caused by microscopic parasites—or, as they are termed, microbes—to which domestic poultry are liable, comprise a group, small in number, but possessed of characters of much interest alike to poultry keeper and dermatologist.

To begin with, they, or nearly all of them, are contagious through the medium of their special microbe, not only from bird to bird and from man to man, but it is pretty clearly established on practical evidence at least, that their contagion is intercommunicable; that is to say, that a fowl may be a source of contagion to human beings, as may a man to fowls.

In the next place some of these microbic skin diseases are so virulent and spread so rapidly that, failing the early recognition essential to the taking of prompt and appropriate measures against their advance, many losses are sustained in a very short space of time, more especially in large poultry

establishments. And in these, as in all other infective diseases of fowls, the more the stock are divided up into colonies the easier will it be to control and limit the epidemic.

The disease of this group, which perhaps exhibits these undesirable qualities in the most marked degree, is that known in the nomenclature of human skin diseases as "*Molluscum Contagiosum*," and since what appears to be a similar manifestation was subsequently observed among fowls, turkeys, ducks, and cage-birds, we may reasonably infer that the diseases are identical. Such a conclusion receives further support from the fact that cases are known where the malady has been acquired by man from animals, and *vice versa*. For the present, therefore, the unwieldy title, unacceptable as it may sound in the ears of the poultryman, must perforce remain.

And, although to some it may savour of the jargon of science, the term *Molluscum Contagiosum* is not, after all, such a bad one, for it points out that the principal characteristic of this skin disease is a "contagious wart." It would, however, be more correct to speak of these lesions in the plural number, for it may be accepted as the result of experience that while the disease may, and generally does, commence with a single wart, others seem to spring up like mushrooms in an incredibly short time. The wart is auto-infective, and hence from the first growth reinforcements soon emanate, each one in itself forming a new focus of infection, ready to invade fresh portions of the skin of its host, or, if opportunity by contact permits, to establish itself in some other.

The direct cause of this disease may almost with certainty be judged to be a micro-organism of some kind, for the evidence that in families and communities, both of men and domestic poultry, it spreads by contagion, is too strong to be ignored and is, moreover, strengthened by experimental research. Nevertheless, authorities in skin diseases have not agreed as yet upon the exact nature of the micro-organism which can indisputably be identified as belonging exclusively to this disease, probably because it is generally found among the children of the poor, under conditions of squalor and dirt; conditions in which many other organisms revel, making the task of identification one of difficulty and uncertainty. The practical points for the poultry keeper to remember are that *Molluscum Contagiosum*, once it appears among fowls, is very prone to spread, that it may have been acquired by them from an attendant adult or child, and, most important of all, that it can be contracted from infected fowls by anyone handling them for the purpose of treatment, who neglects to take certain necessary but simple precautions. These precautionary measures are to wear an old pair of gloves, wash the hands afterwards with a disinfectant soap, and burn all rags used in bathing or dressing the sores.

The symptoms as they occur in poultry are not difficult to recognise, and if they are observed with ordinary care, a distinction between this and other affections with which it might possibly be confounded should easily be made. Still, it is not often that the first case is detected in a flock; indeed, it is only as a rule after two or three and sometimes many more birds appear,

to be ill, that the owner suspects that there is something amiss. In an epidemic that recently came under my notice, the letter that accompanied a specimen for examination stated that the farm "had been fairly run over with it," while in another instance a skilful breeder, who for twenty-five years had reared turkeys successfully, wrote that he "lost five in one day the end of last week and two more this week. Some of the older clutches had similar swellings, but got over it all right. I have kept turkeys for upwards of twenty-five years, but do not remember ever having any die in this way." The typical warts attack the face, wattles, or comb, and, if neglected, make their appearance in the skin of the upper and lower parts of the neck, but seldom involve other regions. They are semi-globular in shape, slightly depressed in the centre, of a size varying from that of a split hempseed to a split pea, and of an opaque, pearly pink colour. When opened they are found to contain a substance like firm jelly, which may, in the course of a few days, become yellow matter as the result of suppuration, eventually forming crusts and cheesy excrescences. These have a tendency to accumulate around and even within the beak, suggesting, and often being mistaken for, roup.

Fig. 1 reproduces a photograph of the head of a young Turkey chick, which illustrates the various stages of change taking place in the warts. Viewed with the aid of a reading glass or lens of low power, the differences will be more clearly defined. In a line below the eye can be seen a pellucid wart in the first stage, unbroken and filled with its gelatinous

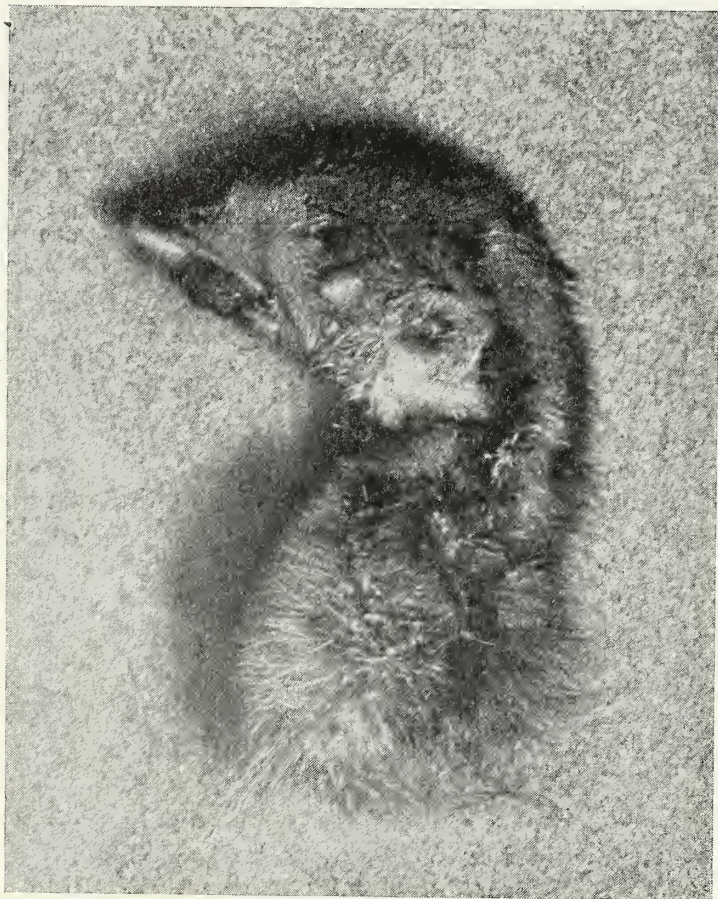


Fig. 1.



Fig. 2.

contents. Just above this wart, and blocking up the outer angle of the eye itself, is another which has broken down and formed a suppurating sore, while running along the under surface of the lower mandible is a fungating mass of warts and debris absorbing the sprouting wattles of both sides.

Fig. 2 represents the head of a Black Rosecomb Bantam chicken. The comb and wattles of this bird had only slightly developed, but the warty excrescences growing on the rudimentary comb give in the photograph the impression of a comb of irregular but more mature growth, since their cheese colour is not reproduced. Apart from the external appearances of the disease, poultry affected with *Molluscum Contagiosum* present symptoms of serious constitutional disturbance as soon as matter commences to form in the warts. The bird is thirsty, appears to be cold, and mopes by itself with ruffled feathers and neck retracted, but frequently changes its position to shake the head, an action due to the irritation of the sores. There is disinclination to eat, which becomes gradually more marked, and unless the bird is relieved by treatment, vision becomes obstructed by the products of inflammation, the mouth and tongue become ulcerated, and death ensues either from starvation or blood-poisoning. A strong adult fowl may possibly recover even without attention, but young and immature stock require early and persistent treatment, or they will show a high mortality. The diseases for which this malady might be taken are roup and favus, but the points of similarity are too slight to allow for any justification of such a mistake, while the contrasts in many symptoms are well defined.

Treatment may be considered under three heads : (i.) Isolation, (ii.) treatment of the affected stock, (iii.) disinfection of premises. (i.) *Isolation*. Every bird suffering from Molluscum Contagiosum must be at once placed in separate hospital quarters, and it is advisable to carefully inspect every individual bird on the establishment, looking carefully on the face, head and neck for the wart in its early pellucid stage. The poultry hospital should preferably be some distance from the runs and houses, and if practicable the treatment of the sick fowls ought to be carried out by one who has not to attend to or handle sound stock. Precautions as regards gloves and cleansing of hands, already alluded to, must not be omitted.

(ii.) In *treatment of the affected stock* three remedial agents are necessary. These are a lotion which can be made daily as required by adding a teaspoonful of boracic acid to a pint of boiling water, a stick of nitrate of silver sharpened to a point, like a pencil, and an ointment to be procured of a neighbouring chemist or veterinary surgeon, made up of resorcin 30 grains and soft paraffin 2 ounces. When the warts are found on a bird in their first stage, namely, as semi-transparent globules, they are to be pricked with a fine lancet or coarse needle, their contents

pressed out with the finger and thumb and the place bathed with the hot boracic lotion. They may then be lightly touched with the pointed caustic nitrate of silver and finally anointed with the ointment, repeating the treatment, with the omission of the caustic, twice daily. The same omission may be made when the warts have suppurated and inflamed, in which event more prolonged bathing with the hot lotion, so as to remove the crusts, will be required. The sufferers should be coaxed to eat frequently, and a nourishing diet of soft food, including oatmeal, chopped meat or broth, and raw egg will help them along. Under such treatment the sores will in a few days soon clean up and heal, but isolation must be enforced until no vestige of them remains.

(iii.) *Disinfection of premises* will comprise the thorough spraying of the walls, roofs, and floors of houses and runs with a strong solution of some efficient but non-poisonous disinfectant, followed by lime-washing. Food utensils and troughs must be also purified.

Finally, the healthy stock are to be carefully observed for several weeks with a view to the possibility of a fresh outbreak, for the period of incubation in this disease is said to be a prolonged one.



Market Report.

The poultry and game trade during the month has been characterised by dulness, due to depression in trade and unfavourable weather, combined with ample supplies. When the poultry trade is bad, only the very best qualities find a ready sale, and as a consequence the secondary qualities begin to accumulate, causing a congestion, to relieve which salesmen are obliged to offer produce at low rates to clear. Pheasants becoming more plentiful towards the end of the month did not help matters; but rather the reverse, as far as poultry is concerned. However, the worst of the depression is over, and already an improvement is noticeable, and, should cooler weather prevail, a quick recovery will follow.

Foreign Game.

The trade in foreign game has been very slack. Up to the time of going to press few or no fresh arrivals have been received. The bulk of the trade has been in what has been left over from last season's shipping, hence it is not to be wondered at that demand has not been great. A fair supply of plover is being received from Holland. The trade in Ostend rabbits has been very indifferent, the weather being so much against their keeping.

The Egg Trade.

Unlike poultry and game, the egg trade, so far as prices are concerned, has been almost phenomenal, especially for English, owing, of course, to the shortage of supply and heavy demand. During the last few days of October and the beginning of November prices ruled higher than has ever been remembered before, even by those who have been in the trade for a large number of years.

Imports of Poultry, Game, and Eggs.

The total imports of foreign poultry for the ten months ended October 31 last show a falling off in value amounting to £32,057 as compared with the corresponding period of 1906. The chief declines are from America, Belgium, and the various countries classed in the "Trade and Navigation Returns" under the heading of "Other Countries." The amounts of their respective declines are as follow :

	Amount of Decrease.
America	£91,963
Belgium	20,760
Other Countries..	4,648
Total	£117,371

On the other hand, Russian and French imports of poultry show increases in value as follow:

	Amount of Increase.
Russia	£79,106
France	6,208
Total	£85,314

The total value of imported poultry for the ten months ended October 31 last is £525,102 as against £557,159 for the corresponding period of 1906.

The imports of foreign game, although showing an increase of £10,606 over those received during the same period of 1906, are less in value by £27,639 than they were for the corresponding period of 1907. The imports of foreign eggs also show a falling off compared with the corresponding periods of 1906 and 1907. The most marked decline is between the ten months of 1907 and 1908, which amounts to £47,078. The total value of the egg imports up to the end of October last £5,644,613.

English Exports of Poultry and Game.

During the month of October poultry to the value of £2,745 was exported; of game the amount was £3,169. The total value of these exports for the ten months to October 31 was £35,194, whilst according to the Navigation Returns no eggs were sent to foreign countries.

WHAT THE MARKET WANTS AT CHRISTMAS.

AS Christmas is now fast approaching, a few words on the special requirements of the markets may be of interest and service to our readers. Generally speaking, at this period the demand for the abnormal in poultry produce is greater than at any other season of the year, larger and fatter birds being required, as the consuming public seek after something very special in the way of poultry, often-times passing over the smaller and tenderer chickens and preferring the bulkier proportions of the capon.

There seem, however, to be certain modifications taking place in the demand for large turkeys. Formerly very large birds were more in demand and, provided they were young, the heavier the bird the higher was its value per pound. Except for the reason of the demand, why the value per pound should advance as the weight increases is a little difficult to understand, as it does not at all follow that size should improve flesh qualities. The public are beginning to realise this, and consequently medium-sized birds are more in demand than hitherto and the market for larger birds is a little more restricted. It must, however, be remembered that the smaller birds must be well covered with flesh, if the best values are to be realised.



A CONSIGNMENT OF TURKEYS FROM EAST ANGLIA.

In order to obtain the best results, great care should be taken in every detail in the preparation of turkeys and all classes of poultry for the Christmas markets. Plucking is an important process in their preparation, as careless work seriously affects values. Care should be taken to avoid any tearing of the flesh in the process. All immature feathers, known in the trade as stubs, should be removed, as they are unsightly. English turkeys should be plucked clean, leaving no feathers except on the neck, as foreign birds are generally marketed with feathers left in the wings and tail as well as on the rump. Beyond twisting the pinion joints under the first joint of the wing in the usual manner, no tying down should be resorted to. Twisting the pinion is not an absolute necessity when consigning to salesmen, as they will do this when hanging the birds up on view.

Large hampers are the best medium for packing. Those who do not possess these can hire them from the principal railway companies at a small cost. Those desirous of availing themselves of this opportunity should make early application to the local stationmaster to prevent disappointment, as there is a considerable demand during Christmas week for these hampers.

When packing turkeys, each bird should be carefully wrapped in grease-proof paper. The bottom of the hamper should be well covered with sweet clean straw, this again being covered with some softer material, such as wood wool or paper, to prevent the straw from damaging the back of the bird, which it is likely to do in the event of the hamper being roughly handled, either in transit by rail or on the markets. The birds should be placed on their backs side by side and the spaces between each bird carefully and firmly filled in with soft packing well covering the breasts of the birds. Care should be taken to prevent the birds from coming into contact with the sides of the hamper; also, it is advisable to pack as firmly as possible.

From inquiries made it seems there will be a fairly large supply of foreign turkeys, and therefore we should be inclined to advise English producers to sell as many as possible locally—provided fair prices are obtainable—rather than risk too many on the open markets. It is always a difficult task to forecast prices, but a fair estimate would be from 10d. to 1s. 2d. per lb. for hen birds, and 11d. to 1s. 4d. to 1s. 6d. for cock birds. The latter price would be realised only by birds of exceptional quality.

There is always a large demand for capons at Christmas, and these should be packed and treated in the same manner as turkeys. Large ducks as well as geese of good quality are expected to realise good values. We have been informed that the supply of English geese is likely to be rather short this season.

If this should prove to be correct good prices should be realised. As France is our greatest competitor in this branch of the industry, a good deal depends on the quality and quantity of geese she sends as to the values English birds will realise.

As Christmas Day falls on a Friday this year, birds should be dispatched to arrive on the markets the Friday and Saturday of the previous week, as shopkeepers will probably not purchase to make up their Christmas show until the Monday or Tuesday of Christmas week. It is, however, rather difficult to lay down any special time for sending, as the weather has such an influence on the trade. If mild and muggy, retailers will put off purchasing the bulk of their supplies till the last moment; if, on the contrary, cold, crisp weather is experienced, buying will take place much earlier.



PLUCKING GEESSE.

[Copyright.]

The Island of Malta.

Demand for poultry and eggs is very large at all times in Malta, not only by reason of the official residents and commercial population, but to meet the requirements of passing steamers who make that a place of call. The native fowls are very poor indeed and totally inadequate. Large quantities of chickens are imported from Tunis, and also of eggs. Efforts are being put forth, however, to improve production on the island. The Governor, H.E. Lieut.-Gen. H. F. Grant, C.B., has imported quite a number of birds from England and has established a small poultry farm, as has Vice-Admiral H. F. Hughes-Hallett, and it is hoped that gradually a better class of fowl will be kept in Malta, by the dissemination of breeding stock among the native population to take the place of their present degenerate birds. The difficulties, however, are very great, owing to the lack of green food, to climatic influences, and to the lethargy of the people. Time will, doubtless, work wonders in that respect.

TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS DURING NOVEMBER.

ENGLISH POULTRY—LONDON MARKETS.					FOREIGN POULTRY—LONDON MARKETS.				
DESCRIPTION	1st Week.		2nd Week.		COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.			
	Each.	Each.	Each.	Each.		Chickens. Each.	Ducks. Each.	Ducklings. Each.	Geese. per lb.
Surrey Chickens.....	2/6 to 4/6	2/6 to 4/6	2/6 to 4/6	2/6 to 4/6	Russia.....	0/9 to 1/3	—	—	—
Sussex ".....	2/6 " 4/6	2/6 " 4/6	2/6 " 4/6	2/6 " 4/6	Belgium.....	2/6 " 4/0	—	—	—
Yorkshire ".....	2/0 " 3/3	2/0 " 3/3	2/0 " 3/3	2/0 " 3/3	France.....	—	—	—	0/4½ to 0/5
Boston ".....	2/0 " 3/6	2/0 " 3/3	2/0 " 3/3	2/0 " 3/3	United States of America.....	—	—	—	—
Essex ".....	2/0 " 3/6	2/0 " 3/3	2/0 " 3/3	2/0 " 3/3	Austria.....	1/4 to 1/8	1/9 to 2/3	—	—
Capons.....	—	—	—	—	Canada.....	—	—	—	—
Irish Chickens.....	1/9 " 2/6	1/6 " 2/6	1/6 " 2/6	1/6 " 2/6	Australia.....	—	—	—	—
Live Hens.....	1/3 " 2/3	1/3 " 2/0	1/6 " 2/3	1/6 " 2/3					
Aylesbury Ducklings.....	—	—	—	—					
Ducks.....	2/6 " 3/6	2/6 " 3/6	2/6 " 3/6	2/6 " 3/6					
Geese.....	4/6 " 7/6	4/6 " 7/6	4/6 " 7/6	4/6 " 7/6					
Turkeys, English.....	—	—	—	—					
" Irish.....	5/6 " 8/6	5/0 " 8/6	4/6 " 8/6	4/6 " 8/6					
ENGLISH GAME—LONDON MARKETS.					IMPORTS OF POULTRY AND GAME. MONTH ENDING OCT. 31, '08.				
DESCRIPTION.	1st Week.		2nd Week.		COUNTRIES OF ORIGIN.	DECLARED VALUES			
	Each.	Each.	Each.	Each.		Game.	Poultry.		
Grouse.....	2/6 to 3/6	2/6 to 2/9	2/6 to 2/9	2/6 to 2/9	Russia.....	—	£5,512		
Partridges.....	0/11 " 2/3	0/10 " 1/9	0/10 " 1/9	0/10 " 1/9	Belgium.....	£618	4,258		
Pheasants.....	2/9 " 3/6	2/6 " 3/0	2/3 " 2/6	2/0 " 2/3	France.....	1,267	162		
Black Game.....	1/6 " 3/0	1/6 " 2/0	1/6 " 2/0	2/0 " 2/3	United States of America.....	9,679	1,915		
Hares.....	2/6 " 3/6	2/6 " 3/3	2/6 " 3/3	3/3 " 3/6	Other Countries.....	£11,564	£11,847		
Rabbits, Tame.....	1/0 " 2/0	0/10 " 2/0	0/10 " 2/0	0/10 " 2/0	Totals.....				
" Wild.....	0/6 " 0/11	0/6 " 0/11	0/6 " 0/11	0/6 " 0/11					
Pigeons, Tame.....	0/6 " 0/6	0/6 " 0/6	0/6 " 0/6	0/6 " 0/6					
" Wild.....	0/6 " 0/10	0/6 " 0/10	0/6 " 0/10	0/6 " 0/10					
Wild Duck.....	1/6 " 2/0	1/6 " 2/6	1/9 " 2/3	1/9 " 2/3					
Woodcock.....	2/6 " 3/0	2/6 " 3/0	2/6 " 3/0	2/6 " 3/0					
Snipe.....	0/10 " 1/4	0/10 " 1/4	0/10 " 1/4	0/10 " 1/4					
Plover.....	0/5 " 0/10	0/5 " 0/10	0/5 " 0/10	0/5 " 0/10					
ENGLISH EGGS.					IMPORTS OF EGGS. MONTH ENDING OCT. 31, '08.				
MARKETS.	1st Week.		2nd Week.		COUNTRIES OF ORIGIN.	DECLARED VALUES			
	Per 120.	Per 120.	Per 120.	Per 120.		Quantities in Gt. Hund.	Declared Values, £		
LONDON.....	17/6 to 20/0	17/6 to 20/0	18/0 to 21/0	18/0 to 21/0	Russia.....	819,610	312,726		
Provinces.....	Eggs per 1/-	Eggs per 1/-	Eggs per 1/-	Eggs per 1/-	Denmark.....	317,846	158,442		
MANCHESTER.....	6 to 7	5 to 6	5 to 6	5 to 6	Germany.....	81,716	30,261		
BRISTOL.....	1/2½ pr doz	1/3 pr doz	1/3 pr doz	1/3½ pr doz	Belgium.....	113,381	48,861		
					France.....	59,206	27,487		
					Canada.....	4,746	2,207		
					Australia.....	73,765	29,488		
					Other Countries.....	1,470,720	£609,472		
					Totals.....				



The County Galway Poultry Improvement Scheme.

The Committee of Agriculture of County Galway have just published their scheme for 1908-9, and we note that they are paying great attention to the subject of poultry-keeping. They have allocated the sum of £390 to be spent as follows: Fifty egg distributing stations will be established, if suitable applicants can be found. The owner of each station receives a premium of £5, besides which in the case of newly-established stations special grants are made of 3s. per bird, to assist in purchasing, and not exceeding £2 towards cost of a portable fowl house. The total cost of this is estimated at £310. Thirty-five turkey stations will be established at a cost of £2 per bird, and also five geese stations at the same figure. Further, a prize scheme has been decided upon, and for this purpose £310 is provided. Under this scheme there are two sections, the first for cottages with gardens, the second for small farms. Although cleanliness, cultivation, and general management of these small holdings are all considered, special mention is made of the care bestowed on poultry and the quality of the birds. The funds for both schemes are provided partially from the rates and partially by the Department of Agriculture. In the case of the egg stations £156 is payable from the rates and £234 by the Department, and for the prize scheme £124 from the rates and £186 by the Department. The whole agricultural scheme only calls for a $\frac{1}{2}$ d. rate.

Poultry at Wye College.

The agricultural students at Wye College have every opportunity of becoming conversant with the ins and outs of poultry-keeping, for on the college farm, some 460 acres in extent, poultry are given an important place. A number of utility breeds are kept, scattered over the farm, and the fowls are looked after under farm poultry-keeping conditions. Natural and artificial incubation are carried out the year through; a good trade in table birds is being worked up, and the experimental side is always kept in view. Under the latter heading tests are made relative to breeding, housing, and feeding, and the results are published in the college journal. A very important experiment was conducted some two or three years ago with reference to the ventilation of poultry houses, the results of which have proved of great value. Theoretical instruction is given, and the

poultry department has the advantage of the scientific staff. External education in poultry is also undertaken, lectures being given in various counties; moreover the college authorities invite correspondence on poultry questions.

Carbon Dioxide in Incubation.

The letter by Mr. T. S. Laidler in our November issue, relative to the effect of CO_2 in incubation, is extremely interesting, though the experiments which we have conducted in the past appear to prove that his suggestion that a similar action takes place as in plant life is not a correct one. In the vegetable world the CO_2 of the air is inhaled by the plant and broken into its elements, namely carbon and oxygen, the former being retained to assist in the formation of starch, cellulose, &c., whilst the latter is liberated. In the course of some of our experiments we have had occasion to seal up the egg drawers in tank and hot-air incubators, analysing the air in the egg chamber each day. In one machine, the ventilation of which is somewhat faulty, we obtained the following results, commencing with the eighth day of incubation:

Normal air contains.....	$\frac{3}{10000}$ th	parts of CO_2
Air in incubator after 6 hours	$\frac{8}{10000}$ th	" " "
" " 24 "	$\frac{11}{10000}$ th	" " "
" " 48 "	$\frac{26}{10000}$ th	" " "
" " 72 "	$\frac{41}{10000}$ th	" " "

We take this to indicate that the embryos in the egg do exhale CO_2 , otherwise the amount of this gas in the atmosphere of the egg drawer, whether in a badly ventilated or a well ventilated incubator, would decrease. We are seeking the opinion of others on this question, and hope to return to it in a later issue.

Incubation Experiments.

We have received a very interesting letter from Mr. H. Cliff, of Haslington, near Crewe, in which he describes the experiments in incubation that he has been carrying on during the last few seasons. At this stage of his experiments there are no figures available for publication, but we hope in a future issue to be able to give details of the results he has obtained, and to describe the lines along which he is conducting his tests. Although artificial incubation is a commercial success there is still much room for improvement, and we wish Mr. Cliff every success in the work he is doing for the industry of poultry-keeping.

Poultry Lectures in Essex.

Courses of lectures have been organised under the auspices of the Essex Education Committee for this coming winter, though at present the names of the various centres are not available for publication. Miss Matthews, the instructress, has just conducted a course of lectures in Thaxted, the course consisting of four lectures, with demonstrations in trussing and egg testing. The average attendance is from forty to fifty, and as the audiences are usually composed of farmers and their wives and labourers, it shows that the right class of person is being interested in the question of poultry-keeping.

Hen-oil Tests.

The question as to whether there is any beneficial effect resulting from the presence of "hen-oil" in the eggs, when incubated under a hen, has been frequently raised in the Poultry Press at home and abroad; but we believe the figures published by the Oregon Agricultural College are the first authentic records of any experiments undertaken. The test was carried out by Prof. C. E. Bradley, station chemist, and his report is as follows:

The method followed was to brush off loose material from surface of egg shell with small brush and while holding egg in tongs, wash shell with jet of ether from wash bottle, catching washings in weighed watch glass. The ether was allowed to evaporate at room temperature, residue dried in desiccator and weighed. Care was taken to use only clean eggs in the tests.

The following weights show amount of oily material extracted from different eggs:

12 fresh hen eggs	...	...	3	milligrams oil
12 china eggs, 2 weeks under hen	...	...	3	milligrams oil
12 hen eggs, 2 weeks under hen	...	28	milligrams oil	
12 eggs, 2 weeks in incubator	...	4.6	milligrams oil	

That the residue from ether evaporation was an oil could be readily verified by microscopical and chemical tests. The amount extracted under these conditions does not, of course, represent the total amount present, but the results are at least comparative, as treatment was uniform throughout.

It is quite evident that the eggs on which a hen has been sitting have a small oily deposit on their surface, and since eggs from incubator at same stage of incubation show only a small fraction of this amount of oil, it is plain that the oily matter is not deposited on the exterior surface of shell through evaporation in process of incubation, but is a natural secretion from the hen. What the function of this secretion is, or whether it has any particular function other than to possibly check evaporation is not yet determined, but some tests are now under way in this connection which will be reported later.

The smooth surface of the china eggs probably accounts for the fact that only a very small amount of secretion was found on them.

Chemical tests showed the presence of oil on egg shells. There was a very small quantity on fresh eggs and on incubator eggs, but a relatively large amount on hen-hatched eggs. The function of this oil or fat, whatever it may be, has not been determined.

A Poultry Teachers' Combine.

The International Association of Instructors and Investigators in Poultry Husbandry is the latest trades union, and we are glad to welcome its advent.

Unfortunately, the name is an incorrect one, for although at the outset the intention of its American promoters was to form an international association, it has been found impossible of achievement; therefore the society is to restrict its field of work to America alone. The object of the association is the advancement of the poultry industry in the United States and Canada, but especially as it relates to teaching and research. There are eight sub-committees to deal with the following questions: (1) To promote legislation which shall safeguard the interests of poultry husbandry. (2) On investigational work. (3) On the systematising of instruction in poultry husbandry. (4) On the advancement of the principles of breeding. (5) On the progress in the knowledge of feeding. (6) On the development of the science of incubation and brooding. (7) On diseases and parasites. (8) On bibliography. The officers are all well known for the work they have already performed for the advancement of the industry, the following having been elected: President, W. R. Graham (Guelph); first vice-president, James Dryden (Oregon); second vice-president, Raymond Pearl (Maine); secretary-treasurer, James E. Rice (Cornell). In addition five directors have been appointed.

A GERMAN EXPERIMENTALIST.

THE report for the year ending September 30, 1908, of the Hubertus Poultry Farm (Geflügelhof Hubertus) at Hüls, by Crefeld, has just been published, and once again Herr P. Sweers makes public the results of his experiments. The utility poultry industry in Germany owes its advancement in a great degree to the private enterprise of Herr Sweers, who for some years past has devoted a considerable portion of his time to the management of his farm. From the mass of detail presented, the following particulars are most interesting. Tests relative to the loss of weight in eggs during incubation result as follows: Ten eggs were set under a hen on November 4, 1907, the weights ranging from 43.05 grammes to 57.8 grammes. In the first eighteen days it was found that they lost from 11 per cent. to 19 per cent., and in one instance 27 per cent., of their weight. No mention is made in this case as to hatching results. Twelve eggs placed in an American hot-air incubator, weighing from 46.3 grammes to 61.25 grammes, lost from 14 per cent. to 22 per cent. in nineteen days; and again, a dozen eggs hatched in a German hot-water machine, weighing from 41.55 grammes to 65.05 grammes, lost from 13 per cent. to 21 per cent. in the same period. As so few tests were made, it is impossible to form any opinion as to the effect on evaporation of addled, infertile, fertile, stale, fresh, large, or small eggs. To decide the question as to whether a setting hen turns her eggs or not, a trial was made in November. The eggs—ten in number—were marked on four sides and the position of the eggs noted each day. The diagram given in the report shows clearly that the position of the eggs in the nest is always changing and, moreover, that the eggs themselves have a different surface uppermost nearly every day.

EMPIRICAL INCUBATION.

By WILL BROWN.

I AM passing through one of the most trying periods of my life. I have been brought up from childhood in the belief that artificial incubation was practicable, and that the machines which have been on the market for years past have proved their value to those who make a business of poultry-keeping, but my beliefs have been cruelly shattered, and all by the perusal of a booklet, entitled "A New Era in Artificial Incubation: the Diathermal Incubator, with remarks upon the Hot Water Incubator and Its Inherent Defects," by Alexander Allan, C.E. Mr. Allan little thought, when he sent me a copy of his book, what tribulation he was preparing for me. But I cannot forget my old ideas all at once; I will be strong and not succumb immediately to his attack, but once again I will review his statements and consider the array of "facts" he marshals.

In the first three paragraphs I read:

Artificial incubation is carried on at the present day by what may be roughly classed as hot air and hot water incubators, according as the heat required is obtained through the medium of hot water or hot air.

The object of the writer is to place before the public the result of twenty years of almost continual experimental research entirely devoted to the subject of artificial incubation.

Also to draw attention to those faults of construction and design as exhibited in the modern incubator, which unless pointed out are apt to be overlooked by the purchaser, whose want of scientific training places him at the mercy of anyone who sells a combination of box, lamp, and water-tank and calls it an incubator.

Numberless experiments have finally convinced the writer, not only of the superior advantages of heating by hot air instead of hot water, but most emphatically that an incubator heated by hot water can never, under any circumstances whatever, give sufficiently good results to enable it to be classed as a success, commercial or otherwise. *The reasons for this conclusion, both practically and scientifically considered, are as unanswerable as they are conclusive.*

What a truly noble mission to undertake, "twenty years of almost continual experimental research," and the results of this stupendous labour made public for the benefit of those who use artificial means for hatching out their chickens. The first doubts as to the accuracy of my beliefs assailed me as I read the last sentence, which, by the way, I have caused to be printed in italics, as also other sentences to follow. Again I read:

That the powerful controlling influence exercised by the external atmosphere over the action of the hot water incubator is fully recognised is sufficiently evident, for purchasers are warned not to attempt incubation in a room where the temperature is liable to fall below 45° F., a quite impossible condition to begin with. For it must be remembered that incubation to be commercially successful must be conducted during the coldest and most changeable months of the year, when variations of both barometer and thermometer are as sudden as they are erratic.

Nor is this all, for he is also instructed that the heat within the egg drawer must be adjusted according

to the temperature of the room. A depressing piece of information, *unless content to take up one's permanent abode with the incubator.* It would have been more candid, though, perhaps, too illuminating, to have said:—First provide a suitable climate, which never varies between 45° and 60°; then start your incubator. For this is really what it comes to.

It is, of course, tantamount to a confession that the so-called regulator employed is useless at those very times when its regulation is most required. That this is so is a fact that is only too soon arrived at by anyone who has ever used one, *the difficulty of keeping the temperature within ten degrees of the mark for any length of time being found insuperable.*

I refer to the records which have been kept during the last five years at the College Poultry Farm, at Theale, and I find that the incubators have frequently worked out a whole hatch with the variation of only half a degree, although I must admit I have never taken up my permanent abode with the incubator. I do certainly find that very occasionally a machine has varied two or three degrees during the three weeks, but then I remember that students—the greater part of whom are tyros at the work—have charge of the incubators. I find relief in this thought.

Continuing, Mr. Allan says, with reference to the last quotation:

Both the heating and the cooling of the large body of water in the tank is obtained by radiation. But while the heating may be governed by the action of the regulator admitting more or less radiant heat from the lamp, the case is very different when it comes to cooling. There the regulator is absolutely useless. It may govern the admission of heat, but not the emission. This can only be effected by radiation.

Consequently it follows that during a great or greater part of the twenty-one days required for hatching, the much-extolled regulator has not only ceased to exercise its vaunted powers, but for all the good it could do might never have existed.

I pass over this in silence and sorrow. I begin to doubt the authenticity of my records. After further consideration of this subject, the following statement is made:

Considering that the heat of the water will be between 140° and 160° F., it may be imagined how the eggs will fare during the hours which must elapse before something like equilibrium can be established.

The reference here is to the water in the tank. My experience—and it is not altogether a small thing, though I cannot lay claim to having devoted twenty years to "experimental research" in incubation; not, however, through any fault of my own, as the truth is I was not born soon enough—goes to show that in all the tank incubators I have worked, and they number nine or ten of different makes, the temperature of the water in the tank varies from 125° to 134° F. My doubts as to the authenticity of my records increase.

I leave this here, and read what Mr. Allan has to say with reference to the circulation of air and the question of humidity:

Cold air descends, not ascends, and the little that ever penetrates to disturb the stagnation within will be found in practice entering the egg drawer through a row of orifices, mis-named ventilation holes, placed there to serve a purpose the exact opposite to that

which in reality they fulfil. Such incoming air becomes heated, and expanding passes out at the bottom, effectively preventing the ingress of the humid air which it was intended should flow upwards and over the eggs.

It will now be seen that the sole use of the elaborate water tray is to moisten the air in the incubator room without having the slightest effect upon either eggs or incubator.

A little experiment, quite simple, and one that Mr. Allan can himself carry out—in fact, I believe he has tried it on another machine—will prove that the circulation of air is upwards, and not downwards as here stated. Introduce smoke into the egg chamber and see at which part it makes its exit. Again, the air is “stagnant.” In the course of my experiments I have frequently had occasion to seal up the egg drawer of a tank machine, from the eighth until the nineteenth day, and I found on analysing a portion of the air every twenty-four hours that the amount of carbon dioxide and water vapour in the air remained constant. But then I must have made a mistake, for have I not already quoted the words: “The reasons for this conclusion, both practically and scientifically considered, are as unanswerable as they are conclusive.”

The summing up is final and conclusive:

To sum up briefly, in the modern hot-water incubator which is designed as a substitute for nature to perform one of her most delicate functions, we have an apparatus which violates every scientific principle involved.

Heated by the most inelastic element to follow the changes of the most elastic. Fitted with a regulator which cannot regulate. Provided with humidity which never penetrates. Unventilated, with a stagnant atmosphere within so devoid of moisture as to contain less than 40 per cent. instead of 90 per cent. How could it possibly be a success?

My doubts, not only as to the reliability of my records, but as to my sanity, increase.

At last I am told exactly what a modern incubator is, for I read:

As a toy it is full of interest, for according to the virility of the stock, and favourable atmospheric conditions, an uncertain percentage of chicks is attainable. But as a commercial success it must always prove a failure.

The fact is that artificial incubation, which at one time was considered well worthy of scientific investigation, has since then remained in the hands of tradesmen and empirics, who as long as they could dispose of their wares had little interest in the matter beyond the question of their profits.

Otherwise the hot water incubator long ere this would have been relegated to the limbo of the museum to take its place amongst those mediæval instruments which owe their infamy to the amount of torture they were able to inflict.

You, who advertise your incubators, at last are painted in your true colours. Fie on you all; and yet how comes it that I find many records of the hatches which have produced 72 per cent., 81 per cent., and 92 per cent. of chickens? Perhaps I have made a mistake and reversed the figures, and that they should read 27 per cent., 18 per cent., and 29 per cent. How does this agree with your own results, Mr. Allan? I notice you say, “And when it is considered that from 40 to 60 per cent. of the eggs in the hot water incubator never hatch . . .” I can only believe

that you refer to your own results, and I would suggest to you that these bad results may be due to one of three things, namely, your so-called hot water incubator, is really only a “combination of box, lamp, and water-tank,” and not of a recognised good make, or you do not understand the elements of artificial incubation, or you did not desire to obtain better results. I leave these three points with you for your earnest consideration. My doubts as to the value of my own experience are decreasing, whilst my doubts as to the value of your “twenty years of almost continual experimental research entirely devoted to the subject of artificial incubation” are increasing.

But I must hasten on, for I am growing tired of this condemnation of the hot water incubator. I read the following under the heading of “Incubation Fallacies”:

Of the supposed pure axioms upon which artificial incubation have hitherto been founded, viz.: An equable temperature, daily airing, mechanical moistening, and a more or less frequent turning of the eggs, the first only is such. The others are simply postulates, the assumptions of ignorance or imperfect observation.

As will be hereafter shown, it is neither the water-tray and canvas of the incubator maker, the dampness of the earth, nor the dew on the feathered breast of the hen, that supplies the moisture required, but nature herself by means of the humidity contained in the atmosphere.

Why then provide additional moisture in your own machine?

Continuing, Mr. Allan discusses at length the question of “cooling” and “turning” the eggs, and proves to himself that both are not only unnecessary, but harmful.

The doubts in my old belief which assailed me have vanished, for now I see the true import of Mr. Allan's remarks, namely, that a panacea is offered in the form of a Diathermal Incubator at £9 5s. for the fifty-egg size, so I shall still continue to look upon myself as something approaching an expert in artificial incubation.

I have never seen a Diathermal Incubator, and for the present I have no desire, for I have read so much about it that I am weary of the subject. There is but one question I should like to ask in conclusion.

On page 13 I read:

TEMPERATURES FOR HATCHING.

First four days	...	...	104° to 105° F.
Fifth day	...	...	102° to 104° F.
Sixth day and onwards	...	...	101° to 103° F.

And on page 28 I read:

Watch the thermometer until the eggs have become warmed and the temperature steady, checking any tendency to rise above 105° F. by means of the balance weight on the valve rod. Then set the temperature finally at 104° to 105°.

At the end of the fourth day, or 96 hours after putting in the eggs, reduce the temperature to 102° to 103° F.

Twenty-four hours later, or 120 hours after the eggs have been put in, reduce the temperature again to 100° to 101°, and keep it there until the end of the seventeenth day, when the temperature should be reduced to 98° to 99° F.

The question is, are all the statements in your book prepared with the same degree of exactitude?



Poultry Exports from Bulgaria.

The annual returns issued by the Bulgarian Department of Agriculture for 1906 have just been issued. These record that the total weight of eggs exported from the new kingdom was 12,063,978 kilos (about 240,000,000), of the value of 10,648,818 fcs. (£425,950), an advance of 20 per cent. over the previous year and an increase in five years of about 50 per cent. Sixty per cent. of the eggs go to Germany, as the trade is largely in the hands of German merchants. The quality and size of these eggs are low, as indicated by the average values—namely, 4s. 3d. per long hundred. Less than 3 per cent. of the eggs are exported to Britain, in spite of the sea communication. The total value of the poultry exported was 589,443 fcs. (£23,578), of which the greater part were geese. Bulgaria is a country of great possibilities in respect to egg and poultry production, and the central authorities are paying attention to this branch of agriculture. We give on the next page picture of the poultry establishment at the Sadova Agricultural College, Eastern Roumelia.

Mr. W. A. Kock.

We are glad to learn that our Danish correspondent, Mr. W. A. Kock, who is adviser to the Society for Profitable Poultry Culture, has been commissioned by the Danish Department of Agriculture to visit the United States and Canada next spring in order to study the methods of poultry-breeding in America. Mr. Kock has paid several visits to England, France, and Belgium, and his report will be looked forward to with great interest. We cordially commend him to the courtesy of transatlantic breeders.

An Admirable Suggestion.

"It was suggested by one of the poultry editors a short time since," says *The Feather*, "that a congress to consider white diarrhoea be called together. In conversation with a Government official it was stated that such a congress might prove of great advantage, but that it should take in the question of white diarrhoea and its causes, brooder pneumonia and its causes, chicken cholera, gapes, and blackhead. If a

representative congress of intelligent breeders could be gathered together for such a purpose, and the Government and experiment station experts be invited to attend, a work might be started at least that would result in great good to the world, but if no effort is made to start such a movement but little development will occur on a proposition that drifts without being guided to a special result." Such a gathering properly organised, at which expert investigators as well as poultrymen took part, could not fail to be of the greatest benefit.

FRENCH NOTES.

(BY OUR FRENCH CORRESPONDENT.)

Poultry Production.

La Défense Agricole says that the poultry industry in France is an old institution, and for a long time farmers tried to produce rare birds, but they proved bad layers. The laying question has been very important for many years, as in proportion the demand for eggs is far greater than the production. The poultry industry is in France very backward owing to farmers not keeping pace with the times; feeding is irrational and insufficient; cleanliness is neglected; the breeds are imperfect; the old hens not done away with; and book-keeping is a thing of no account. The hen is not, as is often said, a necessary but expensive ornament of the farm; on the contrary, it deserves a lot of attention and consideration. As a remedy are suggested: Frequent reading of reviews on poultry; the necessity of strict cleanliness and proper feeding; the clearing out of old stock; the use of rings to indicate the age of the birds; a good choice of local breed, which are often vigorous and productive; and careful book-keeping on a simple line to show the profits.

Montpellier Poultry Show.

The Hérault Poultry Society opened its ninth exhibition on October 31. It was quite cosmopolitan

owing to English, Belgians, and Spaniards taking part. The Central Avenues of Montpellier esplanade were lined on each side with cages containing fowls, pigeons, rabbits, &c. There were nearly 2,000 exhibits. The pavilions to right and left contained the poultry appliances and the producers of the poultry yard. At the entrance in two big aviaries were the exotic and show birds. Judging took place on the Saturday morning, and on the same afternoon the show was officially opened. On Sunday the prizes were distributed; the "Grand prix d'honneur," a work of art, given by President Fallières, was awarded to M. Gibrac de Biarritz for his Toulouse geese, the

POULTRY SOCIETIES IN DENMARK.

By W. A. KOCK,

Adviser in Poultry-Culture in Denmark.

THE first Danish poultry society was founded in Jutland at a meeting held in the year 1879, and was called the "Society for Danish Poultry Breeding." Its first work was to publish a poultry paper and to arrange a poultry show at Aarhus (Jutland).

Later there have been established other poultry societies, and now we have in all three, namely the



POULTRY ESTABLISHMENT AT SADOVA, ROUMELIA.

premier prix d'ensemble to Mr. Goujon de Langeais; the second prize to M. Gibrac for birds of French breeds. The show was well attended during the four days, and a number of ostriches and nandous sent by Mr. Gaspard and Mrs. Werstraete, the fine peacocks sent by the Marquis d'Andigné, and all kinds of splendid pheasants attracted many visitors.

Paris Exhibition.

La Société des Aviculteurs Français has organised its tenth international poultry show. It will take place in Paris from February 5 to 9, 1909. The secretary cordially invites all those interested in poultry matters to take part in it. Particulars can be obtained from M. Fouquet, 46, Rue du Bae, Paris.

L. JACOT.

"Society for Profitable Poultry Culture," founded in the year 1897, with 2,900 members; the "Society for the Advancement of Poultry Breeding in Denmark," with 2,000 members; and the above-mentioned, the "Society for Danish Poultry Breeding," with 3,320 members. The last two societies have existed nearly thirty years. In the last two years all three societies have co-operated with respect to poultry shows, and in the future it may reasonably be taken for granted that the co-operation will also extend to other questions. The united body bears the name of the "United Danish Poultry Societies," and the management consists of three members, including the president, from each society.

The work undertaken by the individual societies consists of distribution of eggs and fowls from good stock and mostly of the following breeds: Brown and

White Leghorns, Black Minorcas, Barred Plymouth Rocks; White, Silver, and Golden Wyandottes; and Orpingtons. Each society has its own poultry journal, which reaches the members twice a month, and each has one adviser in poultry breeding, who gives lectures and practical advice in different parts of the country. Further, the societies arrange poultry shows with classes for live and dead poultry and eggs, and offer prizes for the best fowls. Half of the money given for this purpose is received from the Agricultural Department. Lastly, it may perhaps be of interest to state that the societies set questions of interest for practical poultry keepers and prizes are given for good photographs of stock birds. They have also arranged that eggs shall be sold by weight instead of number, and the Government railways have agreed that eggs can be sent as perishable goods.

Four years ago the societies appointed a committee, consisting of two members from each, who have now finished a special illustrated Danish poultry standard, which has been prepared by the well-known editor of *Poultry Yard*, Mr. J. Pedersen-Bjerjaard. In this standard not only are the breeds described, but also their economical qualities. This book will possess great value for poultry keepers in our country. To the publication the Government has made a grant of 3,000 kroner.

A work, which in the future will have a great influence on the advancement of poultry-breeding in Denmark, is the foundation of breeding centres. Every society has its own centres for the most popular breeds—mainly Brown and White Leghorns, Black Minorcas, Barred and White Plymouth Rocks, Silver and White Wyandottes, Buff and White Orpingtons, and the native Danish race, a fowl of medium size, with an elegant shape, clean legs, small single comb, and of a brown colour. The last named are very hardy and are layers of white eggs, mostly in spring and summer, the average weight of which is a little more than two Danish pounds a score. There are also different breeding centres for Bronze and White Turkeys; Danish, White Embdener and Toulouse Geese; Aylesbury, Rouen, Pekin, and Indian Runner Ducks.

In the breeding centres for hens trap-nests are used, by which it is possible to ascertain the number of eggs from every hen in the stock, and only the best layers are used as breeders. When the hen has laid, the number on the leg band is noted in a book, and at the end of the year the production may be ascertained. The eggs from every one of the best hens must be hatched separately, and every chicken immediately toemarked. From these breeding centres the different members of the societies purchase stock, birds, and eggs for hatching. The price for eggs is only 20 ore each, and for fowls 3 to 5 kroner.* As all this practical work is of great value for utility to poultry keepers in our country, the Government gives an annual grant to the poultry societies and a special grant for the advisers' salaries. Last year the total amount was about 15,000 kroner. Members of the poultry societies must pay a yearly subscription according to circumstances, from 1 to 2 kroner, including the journal—a small payment for so much.

PRESERVED FOODS.

To the Editor of THE ILLUSTRATED POULTRY RECORD.

SIR,—In your issue of October 1 appears a paragraph, entitled "Preserved Foods," which purports to give the results of certain experiments, made by Dr. Harvey W. Wiley, Chief of the U.S. Bureau of Chemistry of the Department of Agriculture at Washington, to determine whether benzoic acid, or its derivative sodium benzoate, when used in foods in quantities such as are generally employed by food manufacturers, might be injurious to health.

I do not know where your information was obtained, but first, there were not "twenty" men but only twelve; second, they were not "fed on foods which had been chemically prepared," as, on the contrary, they were not fed on such foods at all. The facts in the case are: There were twelve young men, divided into two platoons of six each, to one of which benzoic acid was given straight, and to the other benzoate of soda, containing an equal amount of the acid given the first. The preservative was not administered in food, but given in capsules with the meals. No antiseptically-preserved food was given. Dr. Wiley stated that it was given in capsules "because it was thought best to do so," whatever that may mean. The dose given was a large therapeutic or doctor's dose.

The period of the experiment was forty days. Ten days were called the fore-period, in which neither antiseptic was administered. I presume this might be called the preparation period, to see that the men were in good condition and, if not quite all that might be desired, to put them in that condition. Twenty days were devoted to taking the preservative. The last ten days, called the after-period, were devoted to examining results, &c. Thirty-five grammes was the amount to be taken by these men, equalling 540 grains in twenty days or 27 grains per diem per man.

Now any one well versed in the matter will recognise this as a large therapeutic dose, one only used in pretty severe cases of dyspepsia and rheumatism. Moreover, everyone of any sense knows that very simple and harmless drugs, when ingested in large quantities suddenly, are liable to create serious annoyance to the ingestor, producing headache, malaise, sick stomach, and sometimes vomiting.

The report of the Bureau of Chemistry is practically what you state, viz.: that its verdict is against the use of these antiseptics in food, based, however, upon the most misleading, irrational, and inconclusive deductions. They had concluded that these preservatives were injurious before any test was made, and seemingly every precaution was taken to make the result bad for the preservatives.

The experimenters were supposed to represent the people in their endeavours to strike a balance between katabolism and anabolism. They should have had no prejudices, preconceptions, or bias. They should have taken an equal number of men and fed one batch on food antiseptically prepared, and another on the same food not so prepared. Then they should

* 1 Krone = 1s. 1½d. 100 Ore = 1 Krone.

have turned around and substituted one class for the other. There might have been some show of justice in this, if it were possible to get twelve men, sufficiently uniform in health, freedom from disease and hereditary taint, and temperament, which I very much doubt. These antiseptics have been used for many years by millions of people, with no authenticated record of any injury from use, and this throws the burden upon their opponents to prove their case.

I don't think it necessary for me to waste your space by a detailed criticism of the report. What they should have done as impartial judges is to have stated the advantages from the use of these antiseptics, and then, if they could have shown any disadvantages from their use, to strike a proper balance. What their whole work has amounted to has been to show what a large medicinal dose applied to a dozen men could do in producing a very great variety of results. The attempt to prove anything by averaging such conflicting results is absurd.

Dr. Wiley finds they lost on the average in forty days from 1 to 2 lb., and says this is a loss to anabolism and a gain to katabolism. This is supremely laughable, when we examine his charts, and discover that seven of the twelve lost weight in the fore-period, two held their own, and only three gained weight; all this in ten days before being dosed. Rather hard on the doctor's diet, when he contends loss of weight means

katabolism. Several continued to lose, from which we may argue that the doctor's dietary did not agree with them, and they naturally kept on losing. When the ten preparatory days had passed several began to gain again—also rather hard on the doctor, and in favour of the antiseptic; while one man maintained his average in the fore-period, but began to gain weight as soon as he began taking the doses, and wound up about $1\frac{1}{4}$ lb. heavier than he began. Several wound up heavier than they started, and some were lighter. Some were withdrawn at the point when everything appeared most favourable for the antiseptics, the reason given being "because of its ill effects and for other causes," leaving the little joker concealed in the "other causes." This is not right, and the causes should be made plain. These statistics plainly show their unreliability and can be quoted to support any contention. They are a boomerang to the Bureau of Chemistry.

The subject being of such great importance should not have been by law left to the decision of one man and his subordinates, but should have been decided upon by the consensus of the most expert and judicial minded scientists of the country, acting in concert with the best obtainable information from abroad.—Yours truly,

READ GORDON (of Gordon and Dilworth).
New York. November, 1908.



An Australian Visitor.

Our Antipodean exchanges announce that Mr. G. Woodward, of Ballarat, intended leaving for England at the end of October, so that he should soon be among us. Mr. Woodward has taken considerable interest in poultry and his writings are familiar. We are sure that he will receive a hearty welcome in the old country, and that if he desires to study the methods adopted on this side every opportunity and facility will be afforded. We understand Mr. Woodward intends to purchase a number of stock birds, when here.

British Columbia.

The poultry industry is growing by leaps and bounds on the Pacific side of the Rocky Mountains,

where the climatic conditions vary very greatly from the Eastern Provinces of Canada. Many Englishmen interested in this subject have gone out to that great section of the Dominion, and recently two prominent breeders have joined their ranks, namely, Mr. G. E. Parham and Mr. Petley Price, who should help greatly in development of what must become a great industry. We have lately had an interview with a gentleman interested in a large poultry establishment, and the account he gives of prospects is most roseate. In spite of the considerable progress made, demand is so great that eggs and chickens to the value of £80,000 annually are imported from the United States. From a brochure issued by the Provincial Government it is stated that the retail prices for eggs ranged from 1s. to 3s. per dozen, with an average of

1s. 6d. per dozen ; fowls being from 20s. to 32s. per dozen, chickens from 16s. to 28s. per dozen, ducks 20s. to 44s. per dozen, geese 4s. to 6s. each, and turkeys from 11d. to 15d. per pound. The bulletin in question says :

Every portion of British Columbia is suitable for poultry raising. In the coast district hens, ducks and geese can be bred to great advantage, and the dry-belts and uplands are particularly well adapted to turkeys. With such facts before them it is a matter for surprise that many farmers in British Columbia send to the nearest store for their eggs and fowls. Eggs and chickens are by-products on every well-conducted Eastern farm, and they add considerably to the annual income, as well as providing agreeable and healthful variety to the family's bill of fare.

Prices of Eggs in Natal.

"Colonial," writing in the *Natal Mercury* says : "I would not altogether like to say that eggs have been a drug on the market, but, owing to the immense increase in production prices have ruled lower than usual for this time of the year, and they have been down to the remarkably low figure of 6d. per dozen. Of course, the Transvaal, which was a large buyer from here, has been developing her own resources, and has not imported nearly so much as in previous years, and this accounts somewhat for the plentiful supply." We are so accustomed to regard South Africa as the home of high prices that the above figure is surprising. It is of interest, however, to learn that the poultry industry is advancing so rapidly, doubtless stimulated by the high rates hitherto obtainable. Another writer in the *Cape Mercury* states that 9d. per dozen is a profitable return.

Proposals re Bad Eggs.

For the purpose of stopping the traffic in bad eggs, a number of farmers interviewed the Under-Secretary for Agriculture of New South Wales recently, and suggested the enforcement of regulations on the following lines : (1) The inspection of oversea eggs on the wharf. (2) Condemnation of all parcels showing over 10 per cent. of bad eggs. (3) That all eggs be marked with the date of reception in cold stores, so that purchasers will know what they are buying. (4) That retailers be compelled to ticket eggs and sell the same true to description. (5) Preserved eggs shall be sold as such, and the form of preservative described. (6) Inspection shall be made during all seasons of the year, and more particularly during the warm weather. (7) That these reforms are essential in the interests of pure food for the community. The Under-Secretary promised to bring the proposals before the Minister.

Judging Competitions.

The Cape Town and Western Province Poultry Society has instituted a series of monthly judging competitions, which remind us of what was the custom in the border districts of Lancashire and Yorkshire in the early part of last century. One breed only will be staged each night, and any member may issue a challenge, which can be taken up by any number of members desirous of matching their birds against that of the challenger.

POULTRY-KEEPING IN CANADA.

By ALEX. M. PRAIN, J.P.,

Member of the Scottish Commission to Canada, 1908.

IN developing the agricultural resources of such a large new country as Canada, where the pioneer is forced to take from the soil the main essentials for a livelihood, poultry-keeping in an advanced form can scarcely be looked for. Thus it is that beyond the stock necessary to supply the immediate wants of the family little attempt has been made to raise poultry-keeping to the dignity of an organised industry. This applies particularly to the great prairie lands of the Far West, where millions of acres of rich land are awaiting the advent of the pioneers and homesteaders to change the bare surface of the earth into waving fields of ripening grain. To the ardent poultry breeder there is the charm of mystery and veiled expectation about this great undeveloped region, where

"The lovely sunsets flame and die ;
The giant valleys gulf the night ;
The monster mountains scrape the sky,
Where eager stars are diamond bright."

That profitable poultry-keeping will follow in the wake of the grain growing boom may be confidently assumed. Small townships are everywhere springing up into large centres of industry ; the mining and lumbering camps are requiring more and more produce of this kind, so that a ready home market may be depended on. Even as it is, Canadian exports are gradually falling off. That is not due to decreased production, for this is advancing by leaps and bounds ; but the home consumption is developing even more rapidly. From the older settled Eastern Provinces the surplus production finds its way to the North-West and to British Columbia. The general agriculture in the Eastern and maritime Provinces is being gradually transformed from grain growing into dairying, and usually dairying and poultry keeping go hand in hand, so that even further progress may be looked for in the near future in these advanced provinces. Co-operative methods of marketing the dairy produce are spreading rapidly, and were these same methods applied to the collecting and marketing of eggs an enormous stimulus would be given to the industry.

What cannot fail to strike the observer is the average good quality of the fowls seen at almost every farm. The ordinary mongrel collection, so common yet in our country, is happily at a discount. On the other hand, pure-bred flocks are numerous and, almost universally, pure male birds are being used. This can be attributed largely to the influence of college teaching, as well as to the number of pure eggs sent out for hatching purposes from the various experimental farms. An intelligent interest in the quality of the poultry stock on the part of the farmers is one of the most hopeful signs for the future development of the industry. Barred Plymouth Rocks are undoubtedly still the prime favourites. Probably 70 per cent. of the pure-bred fowls are of this useful variety. Buff Orpingtons, White Wyandottes, Single and Rose-combed Minorcas, Rhode

Island Reds, and White and Brown Leghorns are, however, gradually gaining in favour.

The two phases of poultry-keeping—the Fancy and the Utility—are as sharply defined in Canada as with us. Each no doubt plays a useful part, yet it cannot be denied that the craze for purely artificial points of beauty or form has ruined the useful qualities of many breeds. At most agricultural shows an extensive poultry classification is provided, with good prize money, though the competition is not yet very keen. Poultry shows pure and simple are events of the utmost interest to the fancier. Judging is mostly done on the points system, or at least points are enumerated, but it is just possible that the birds are judged first and the points put on afterwards.

The establishment of poultry institutes all over Canada is playing an important part in the development of the industry. These associations are formed on the same principles as our local poultry societies at home, but they go much further in their scope. It is a regular practice to hold monthly meetings, when lectures are given by prominent experts, followed by a discussion. Birds are brought to be judged and compared. One exhibition at least is held each year at which a lecture is given, making an educative agency of the show. The Government gives one association in each county a grant of from twenty-five to fifty dollars to encourage utility poultry-keeping. The services of an expert from one of the agricultural colleges can also be had at any time free. These associations are excellent agencies for distributing pure eggs and cockerels to the farmers in the districts in which they are formed.

Recognising the value of the industry to the farmers in Canada, the Government is doing a great deal to encourage it. The well-equipped poultry establishments in connection with the various Government experimental farms bear evidence of this. With the Agricultural College at Truro, Nova Scotia, the Macdonald College near Montreal, the Ontario College at Guelph, the Central Experimental Farm at Ottawa, and others in the West, the scientific and educative side of poultry-keeping is fairly well provided for.

At the Macdonald College the poultry department, which is under charge of Mr. P. Elford, is supplied with housing of the most up-to-date and elaborate description. The incubator room, lecture rooms, egg room, offices, &c., are in keeping with the rest of the magnificent college buildings, while the poultry accommodation is planned mostly on the colony system. About 680 hens are kept, and an annual stock of 3,000 chickens reared. The breeds are Plymouth Rocks, Wyandottes, Single-combed Rhode Island Reds, Orpingtons, Minorcas, and Leghorns.

At the Central Experimental Farm, Ottawa, the poultry department is under the charge of Mr. A. G. Gilbert, a veteran in knowledge and a pioneer in poultry development. Here the evolution of modern poultry-housing was seen in its various progressive stages, beginning with the long range of artificially-heated houses with runs attached, to the latest type of open pointed colony houses with sliding glass windows in the middle, and on each side open fire-screens over which cotton canvas curtains could be drawn in very cold weather. An additional cotton screen could be unfurled in front of the perches in

extreme cold. Mr. Gilbert believes implicitly in keeping up the stamina of the stock. From healthy, vigorous stock chickens hatch well and are easily reared. He also advocates plenty of variety in the diet, an abundance of fresh air, with strict avoidance of damp. The fowls bore evidence of excellent theories being successfully carried out into practice. The varieties consisted of Barred and White Rocks, Buff and White Orpingtons, Minorcas, White Leghorns, Faverolles, and Light Brahmas.

At the Ontario Agricultural College and Experimental Farm, Guelph, the poultry department is equipped with capital buildings and yards constructed according to the most approved plans and furnished with incubators, brooders, and everything else required for convenience and efficient work in the management of poultry. The stock consists of twenty-five varieties representing fifteen breeds, the principal of which are Barred and White Plymouth Rocks, White and Brown Leghorns, Buff and Spangled Orpingtons, Silver Laced, Columbian, and Silver Pencilled Wyandottes and Minorcas. A few of each variety are bred up to exhibition standards, but *utility* is the main feature kept in view. Mr. W. R. Graham, B.S.A., who is in charge of this department, has won a reputation for scientific research and practical experimental work, which has made him known in every country where poultry are kept. One experiment in regard to housing gave conclusive evidence in favour of the open-fronted freely-ventilated system.

Mr. Graham has implicit belief in rearing chickens in the open as much as possible and on fresh ground. To show how poultry-rearing and fruit-growing may be safely, judiciously, and profitably combined, Mr. Graham had his stock running on the horticultural section of the farm filled with fruit and vegetables of all kinds, with the consent of the head in charge of this department. Mr. Graham is a great stickler for type in his fowls, and has set himself to produce good laying strains which also carry a fair proportion of meat. His strain of Plymouth Rocks were excellent in these two particulars.

There is a growing tendency to feed more and more on dry grain. Where mash foods are given, the system of giving these at night instead of in the morning is gaining in favour. Trap nests are in common use not only at the Government farms but in private yards. Large numbers of fowls are kept in the garden plots round the outskirts of the cities, and, while this may be done as a hobby, the hobby is looked for to leave a balance on the right side.

The fertile fruit valleys of British Columbia provide ideal conditions for chicken culture. A rich soil, delightful climate, with abundant shelter, would rejoice the heart of many a British backyarder. The crate fattening of chickens is rapidly on the increase, and for this purpose the Plymouth Rock seems exactly to suit the taste of the Canadian consumer.

Canada may be summed up as a country of great possibilities. Though the winter is cold, ample evidence has been obtained from actual experiment to show that, under proper housing conditions, and with judicious feeding, good egg returns can be obtained even during the coldest months.

A FOOD FACTORY AT RYE.

THROUGH the courtesy of Messrs. Albion Thorpe and Sons, we were recently enabled to pay a visit to Rye to inspect one of the several mills in the country that are nowadays largely devoted to the manufacture of poultry foods. Furthermore, we had a favourable opportunity of studying the

Sussex that keeps the trade in them alive and flourishing. It is a trade that requires a large demand to make it worth while. The process, while it holds no particular mysteries, is a slow and difficult one. The grinding requires special stones, and the stones require great skill in "dressing" or sharpening, so



THE FACTORY.

[Copyright.]

modern process of making Sussex Ground Oats—the food that is identified with Sussex as closely as hops are with Kent or hams with York. Now the name of Sussex Ground Oats is a household one among the breeders and fatteners of the kingdom; but it is especially so in Sussex itself, where the poultry industry is, so to speak, condensed to a degree unknown in other parts, and where the demand for nutritive foods is correspondingly great. In the first instance, it was the Sussex demand for ground oats that created their manufacture, and to-day it is largely

that they may perform their task of cutting up into meal the whole of the oat, including the husk. Now the dressing of the stones and the proper attention to the grinding involve a highly specialised form of mill labour, and it is only in Sussex, where the demand for such labour has existed for generations, that the men can be found for the work. In this way the Sussex demand for ground oats has made their manufacture an art, the traditions of which have been handed down from father to son. The peculiar merits of the article are too well known to need pointing out,

and anybody acquainted with the ordinary processes of agricultural milling will understand how ground oats are produced, but the following details of Messrs. Thorpe's establishment may prove of interest to the student of up-to-date methods.

The factory itself is so close to the railway station that it almost forms part of the latter—an enormous convenience in regard to the despatch of goods. Moreover, Rye is quite near to Dover, and Dover is the port where Messrs. Thorpe's consignments, are shipped for Ireland, Scotland, and the north-west towns. The factory is therefore most favourably situated for trade, being at once within easy reach of the large breeding and fattening centres and possessing facilities of rapid and safe communication with more distant parts. On the ground floor the principal grinding room is constructed of timber protected by corrugated iron sheeting; it was not originally built for a mill, but with the structural alterations made by the firm it answers the purpose admirably, being both well lighted and well ventilated.

Here the plant is of the most up-to-date type. Grinding is performed by two pairs of stones, these being dressed by a man who is employed exclusively for that purpose. The stones, of which, of course, the upper ones are the more important, are known as Derbyshire peaks. They measure about 4 ft. across, and when new are some 16 in. in thickness. With constant work and re-dressing this thickness rapidly diminishes, and when the limit of weight—or rather lightness is reached, they are discarded in favour of new ones. The stones are enclosed in iron bands with detachable iron pegs, by means of which a crane lifts them into the required position. When ready for use they are placed in their "tun" or wood casing; they are fed with grain through a hopper, and the ground product is then passed through a duct, or "conveyor," by means of a worm to an elevator, whereby it is raised to be shot into the sacks ready for its reception. Hoppers, conveyors, elevators in this room are all of the most modern and approved type. In a smaller room, where pig and other meals are ground, the machinery, while essentially the same in principle, is of a rather older pattern, but even here the automatic filling of the sacks was eloquent of the labour-saving changes that have taken place since the days when a man with a spade had to be stationed where the meal discharged itself in order to shovel it into the sacks. The larger grinding room, however, is where the Sussex Ground Oats and the Fattening Meal are made, both by exactly the same process, the difference between them lying merely in the quality of the oats. With its huge stones, weighing 25 cwt. a piece, and making 180 to 190 revolutions a minute, its piles of sacks filled to the brim, it affords an excellent illustration of what modern milling means.

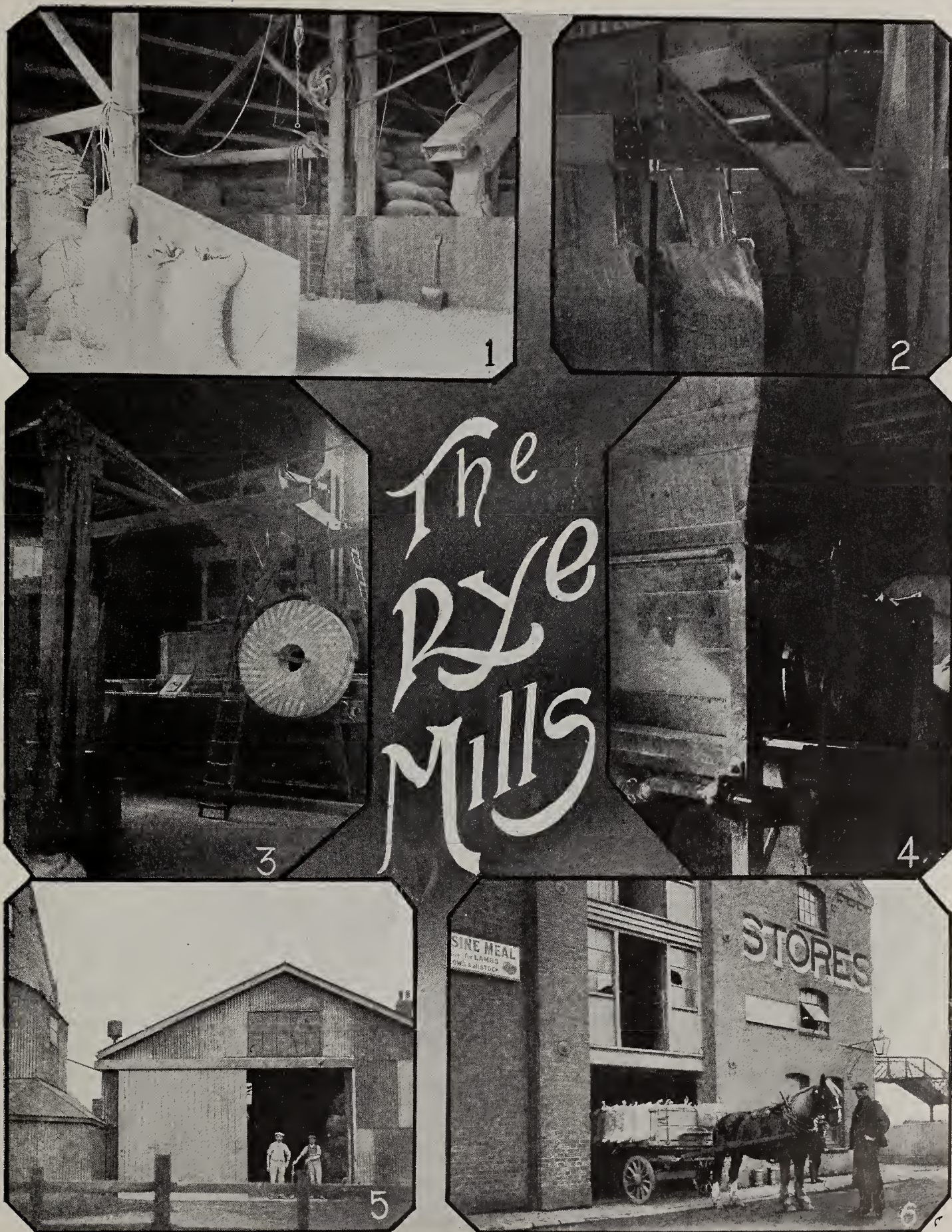
In connection with Sussex Ground Oats, one feature of Messrs. Thorpe's machinery should be noticed before we quit this room. In the downward shaft of the elevator is an open "sifter," the object of which is to reveal to the man attending the stones any

deviation from their perfect adjustment and grinding powers. Unless perfectly adjusted, the stones do not grind the husk of the oat as it should be ground in order to secure the genuine meal, and this husk would therefore pass more or less bodily into the sack were there not some means of discovering that it had not been duly ground. In this case the sifter would enable the attendant to see at a glance that something was wrong, since a stream of husks would descend its inclined surface within his full view, thus warning him that the stones were not working aright. But for this ingenious contrivance sacks might be filled with imperfectly-ground oats before anybody was the wiser.

On the next floor, as one threads one's way between piles of bulky sacks, more interesting machines may be noticed. There are hoppers and crushers for maize, oats, barley and beans; we were permitted to see a maize crusher in operation and to watch the progress of some poultry meal along the wooden trough or "conveyor" to the elevator. The layman watching the almost leisurely movement of the "worm" that propels the meal to its destination would probably be surprised to learn that the meal travels from the mill to the sacks at the rate, roughly speaking, of two sacks per minute. Among other instruments of particular note may be mentioned a machine for the grading of the different ingredients for the manufacture of Dry Chick Foods, and a sifting machine through which the manufactured article finally passes into the bags, and which takes out all dust, thus ensuring a clean product; there are on this floor also sundry implements connected with the other departments of agricultural milling, and solid wedges of that delectable substance called "cake."

The firm of Albion Thorpe was not, in its early career—it is fifty years old—a poultry food concern, but was employed in the making of more general agricultural foodstuffs. Their specialisation in later days was partly called forth by the increasing demand for Sussex Ground Oats, and partly by the law of modernity that ordains specialisation, in some branch or other, of every manufacturing business. One may mention that the firm does a considerable business in small packets of hops, for sale to private brewers.

Another flight of steps takes us to the top floor, and this is, perhaps, from the poultry specialist's point of view, the most important of all. For this room is where the ingredients are kept—the ingredients, that is to say, of Messrs. Thorpe's well-known mixtures, of the Dry Chick Foods in five qualities, of the Turkey and Duck Foods, and last, but not least, of the "Cock o' the Walk" Poultry Meal and Oatmeal Chicken Meal, not to mention a dozen or so other dainty preparations for game and all classes of poultry. Here is the home of mysteries. The mysteries are kept in sacks, and the sacks are kept tied up for the most part until their contents are wanted. For that matter, one would not be much the wiser if one were allowed to put one's hand in any sack and extract a handful of mystery, since the secret, as in the case of the Sussex Ground Oats, is not

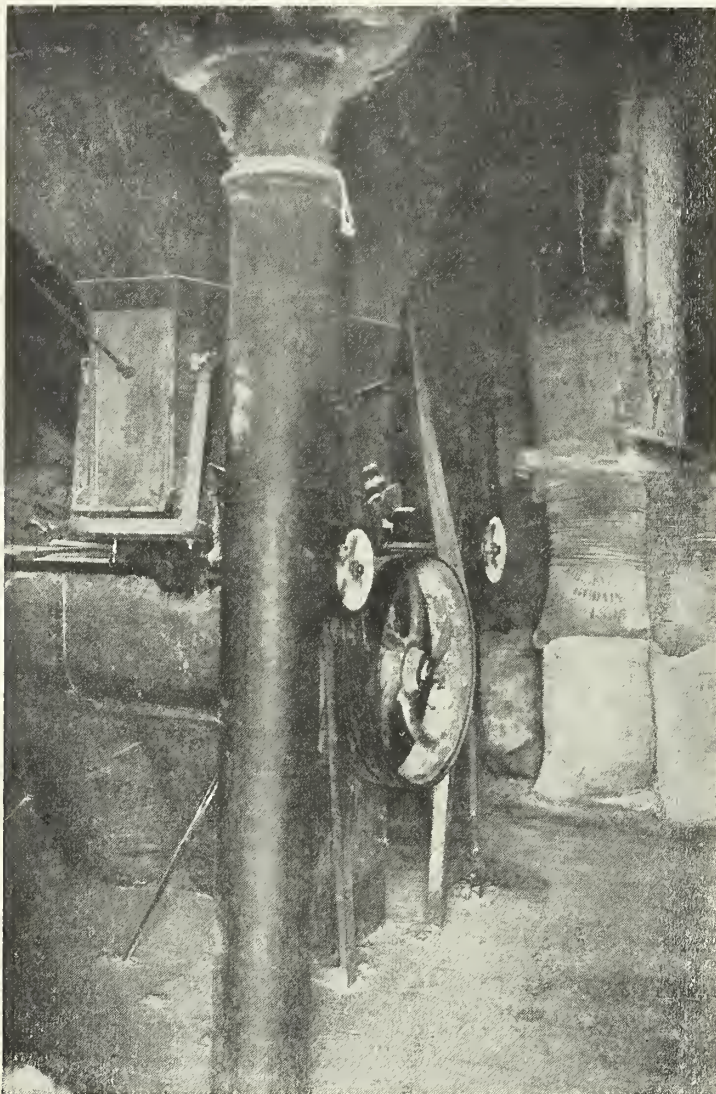


1. Mixing Room.
2. The Conveyor—showing how the bags are filled.
3. Grinding Plant, with runner stone on crane.

4. Chick Food Sifter.
5. General View of Mill.
6. View of Factory.

[Copyright.]

in the material but the process. The success of these mixtures depends simply and solely upon the mixing; it is possibly superfluous to add that everything is done to secure absolute uniformity in this respect. Now, this absolute uniformity, as is well known, can only be secured by automatic means, and when, therefore, one sees on the floor of the ingredient room a heap of meal evidencing symptoms of more than one ingredient, and one is told that it has been mixed "by hand," one knows that in the stricter sense it has not been mixed at all. The real mixing takes place when the meal is shovelled from the centre of the floor to a mysterious cleft at the side, to disappear



Meal Mixer and Conveyor.

[Copyright.

thence and probably not to be seen again until it emerges from the mixing machine—often a hardly recognisable likeness of its former self.

The average output at the Rye mills varies slightly with the character of the food manufactured. Thus for Sussex Ground Oats 14 to 15 tons per week is a fair estimate; that for fattening meal is a trifle more.

The day's work begins at six in the morning, and the stones run till ten in the evening, and on occasions of extra business pressure till a good deal later; and one may be pardoned for mentioning that since this extra pressure has made itself felt rather frequently of late, preparations have been made to cope with it, and in a few months hence there will be added two pairs of stones to the grinding room, with an additional engine. It only remains to consider the motive power of the intricate and yet perfectly simple machinery on the three floors. In the old style of mill there were, of course, the two natural agencies of wind and water that the miller relied upon for his milling, but the introduction of machinery and the stress of competition enjoining automatic regularity in production and every labour-saving contrivance that can be devised have virtually rendered the wind or water-driven mill an obsolete and useless, if picturesque, survival. Thus the working of the Rye mills depends upon a single gas engine made by the firm of A. Crossley and Company. It occupies a small room and is approached by an open passage from the main mill. When once started it needs but little attention, being self-lubricating and, in fact, an up-to-date piece of mechanism in every respect. It is of 42 horse-power. Messrs. Thorpe generate their own gas from anthracite coal and coke, and the plant for this process is contained within a small chamber at the rear of the premises. One may notice here, also, an ingenious contrivance set into the wall dividing the room from the main milling room. This is a fan and dust-box, the function of which is to remove the sweat from the stones during the grinding process; it plays a most important part in meal-making, particularly in the manufacture of Sussex Ground Oats, in which dryness is essential to complete success. The connection between the engine and the machines for grinding, crushing, sifting, and mixing is made by what are known as "fast and loose" pulleys. We have not the space to describe these, even if it were necessary; but the effect of the system is, briefly, that any machine can be started in any part of the building independently of or in conjunction with the rest by a single pair of hands. Indeed, the economy of labour is one of the most impressive features of the mills at Rye, when one thinks of the number and variety of their products—many different sorts of meal, flint, grit, and oyster shell. To take, as a single illustration, the principal grinding room, the full staff consists of a man and two boys. The former is the stone dresser, and the duties of the latter are merely to feed the stones and to take off the bags as soon as they are filled with meal and weigh them. The machines do the rest.

Another International Honour

Added to the already long list of International Awards obtained. At the
CENTRAL CANADIAN EXHIBITION, Ottawa, September, 1908,

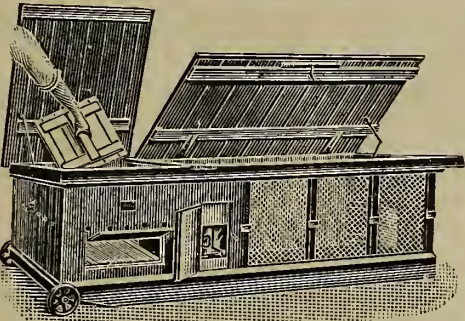
Tamlin's Incubator And CHICKEN REARER

WERE AWARDED

Two Grand Diploma

For the best Incubator and for the best Chicken Rearer at the Exhibition

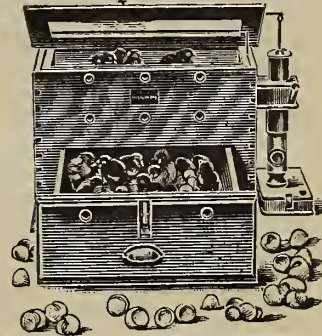
GRAND DIPLOMA
FOR THE BEST CHICKEN REARER
— IN THE EXHIBITION. —



In competition with the principal manufacturers of America
— and Canada. —

12 INTERNATIONAL
HIGHEST AWARDS
now obtained. The Record of
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NORTH OF IRELAND NOTES.

By PERCY A. FRANCIS.

Co-operation in poultry-keeping continues to increase in Co. Antrim. The Dervock Co-operative Society is in a flourishing condition and is marketing over £6,000 worth of eggs yearly. Part of the profits is utilised in holding an annual social meeting, at which the shareholders and other co-operators meet and discuss the year's work. The Rev. J. Colhoun is the active organiser of this work, and the whole movement in the district owes a great deal to Mr. J. S. Stewart-Moore, of Ballydivity, who from the start has been a strong supporter of Sir Horace Plunkett's co-operative propaganda. The Dervock district has greatly benefited by its Co-operative Poultry Society, and not only prices but also the quality of poultry produce in the district have considerably improved since its formation. The society was started in the early days when most of the difficulties attending such a movement were unknown dangers, and it says much for the pioneers—Mr. Stewart-Moore, Mr. John Rea (lately deceased), and Mr. McClure—that, in spite of heavy financial losses the first few years, they stuck to their task and pulled the society through into calm waters.

The Hon. Ethel Macnaghten, of Runkerry, Bushmills, takes much interest in the poultry industry in her neighbourhood. Recently at her request I gave a lecture at Tonduff Schoolhouse, not far from the famous Giant's Causeway. Most of the people in this district are fishermen or small farmers, and as the tourist traffic in the summer provides a good market for eggs and chickens, poultry-keeping is a means of considerably augmenting their small incomes. The housing of the fowls is, however, in most cases very primitive and the common practice of roosting the birds over the cows in a dark, evil-smelling cow byre is productive of much tuberculosis. What a pity the Dairies and Cowsheds Order does not include a clause making it illegal to house fowls with cattle in this way!

With so many efforts being made nowadays to stamp out, or at all events to lessen, bovine tuberculosis it seems a folly to allow tuberculous fowls (which are far more common in Ireland than most people imagine) to sleep over the cows' heads and contaminate the very fodder the animals consume. Whilst it is considered that human, bovine, and avian tuberculosis bacilli are merely modified forms of the same species, some attention at least should be paid to a probable constant source of infection.

In the Ballymoney district Mr. Robert McElderry is very energetically working to improve the poultry and fruit industries and has succeeded in forming an association in North Antrim for this purpose. He is also endeavouring to establish a poultry and fruit market in Ballymoney, which is already a very important centre for the sale of all other kinds of agricultural produce. Mr. McElderry has applied to the Co. Committee of Agriculture and Technical Instruction for the services of their fruit and poultry experts to attend at Ballymoney on market days to meet the farmers and give advice on their subjects.

In November Mr. McElderry organised meetings at Dervock, Seacon, and other places. Amongst other speakers Mr. Harper, fruit expert to the Irish Department of Agriculture, attended. Mr. Stewart-Moore, Major Montgomery, and Rev. Ford-Hutchinson are prominent local men supporting the new society.

In Co. Tyrone and Co. Down Miss Scott and Miss Graham are continuing their work as poultry instructors. Just now the numerous egg and turkey stations have to be inspected and fresh birds purchased for the coming season. This work entails much laborious cycling and uncomfortable travel in bad weather, and is not the pleasantest of the very varied duties instructors have to perform. Girls taking up work of the kind require to have sound constitutions, tempers which may bend but never break, and powers of adaptability such as are generally found in a successful explorer of unknown countries. They are expected to be able to say definitely when asked by troubled poultry keepers: Why eggs are unfertile? Why chickens die in the shell? Why the hens don't lay more eggs in the winter? And to name remedies which will immediately cure any disease, from bumble-foot to comb disease.

Mr. John Malcolm, who recently came over from Scotland and started a poultry farm at Greenmount, Antrim, has had a very successful season. Greenmount is a beautiful old domain which, before Mr. Malcolm purchased it, was, like so many similar places in Ireland, unoccupied for several years. A fine mansion with a front of the famous red Dumfries sandstone occupied the centre of the well-wooded grounds. This mansion was unfortunately burnt to the ground a short time ago, and Mr. Malcolm is now preparing to build anew. He keeps several varieties of birds, but specialises in Silver Grey Dorkings, Black Orpingtons, and American Bronze turkeys. The grounds are ideal for rearing and the birds are under the care of an experienced Scotch poultryman. The idea is to combine utility and exhibition poultry-keeping.

UTILITY POULTRY CLUB.

FOUR MONTHS LAYING COMPETITION.

THE second Four Months Laying Competition at Bagshot commenced on October 21, the pens belonging to those members of the Utility Poultry Club who competed last year. Several of the pens entered failed to appear, no notice of withdrawal being given, and as the others dropped in at intervals during September, the majority were on the spot before it became apparent that the number would be much smaller than was expected. It being, therefore, too late to give competitors the option of abandoning the competition, it was decided to hold it in spite of the poor entry.

Several pens sent in uncovered hampers during tempestuous weather arrived soaked and developed bad colds. These were apparently quickly cured, but became chronic, returning with every recurrence of wet weather (but there was no sign of roup), the rapid changes in temperature being particularly felt

by these birds. On one occasion there was a fall of 64 deg. in five hours, and daily falls of 30 deg. to 40 deg. have been frequent. Frost has been registered in every week since September 10, with sunny and very warm days. In the third week of the competition there were 14 deg. of frost, the ice remaining unmelted in the lower parts of the meadow for two days.

All the pullets in pens 13 and 18 were in full lay before scoring commenced, when heavy rains with rapidly falling temperature, ending in frost accompanied by bitter east wind, caused seven to contract bronchial colds. They have since recommenced to lay. Pen 16 laid 56 eggs before scoring commenced, both the laying pullets being now broody for the second time. No. 45, pen 6, is also broody for the second time. Five pens have not yet laid. All the birds are now in good health.

Below is the table of results for the first twenty-eight days. Fifty-six birds are entered, including the home pen. There are four pullets in each pen.

Pen.	Breed.	Eggs.	Points.
1.....	White Orpingtons.....	—	...
2.....	Home birds.....	62	... 355
3.....	White Wyandottes	—	...
4.....	Buff Orpingtons.....	—	...
6.....	White Wyandottes	14	... 80
7.....	Black Leghorns.....	52	... 287
8.....	White Leghorns	24	... 138
10.....	Black Leghorns	41	... 240
11.....	Buff Orpingtons.....	18	... 106
12.....	Scots Greys.....	—	...
13.....	White Wyandottes	45	... 230
15.....	Buff Orpingtons.....	—	...
16.....	Buff Orpingtons.....	34	... 199
18.....	White Orpingtons.....	17	... 95
	Four Indian Runner Ducks...	84	...

A. S. GALBRAITH, Manager.

TRADE NOTICES.

Three exceptional honours at the Franco-British Exhibition were awarded to Spratt's Patent, Ltd., who received the Grand Prix, Diploma of Honour, and also a Gold Medal.

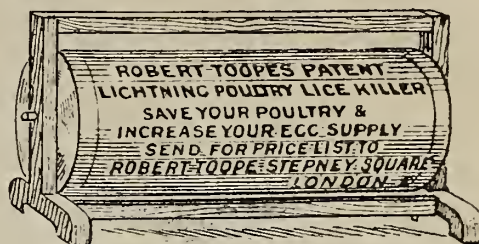
We have received from Messrs. Boulton and Paul, the well-known poultry appliance makers of Norwich, a copy of their newly published catalogue, a profusely illustrated volume of 160 pages, containing particulars of every conceivable kind of fowlhouse from a coop to a complete poultry establishment. We would advise our readers to secure the catalogue, which, we are informed, will be sent free on receipt of a postcard.

The following is a list of Mr. W. Tamlin's exports for October, 1908:

Five 100-incubators, five 60-incubators—to Mr. W. P. Smith, Australia, per ss. Port Augusta. One 60-incubator, one 100-foster mother—to Mr. A. V. A. Cole, Southern Nigeria. One 60-incubator—to Mr. G. Henroz, Belgium. Three 60-incubators, two 100-incubators—to Phillips and Co., Algoa Bay; order of J. Stephens, Ltd. Two 30—"Ostrich" incubators—to Port Elizabeth; order of Tozer, Kemsley and Fisher. One 100-incubator, one 100-foster mother—to Mr. W. Allen, Delagoa Bay, per

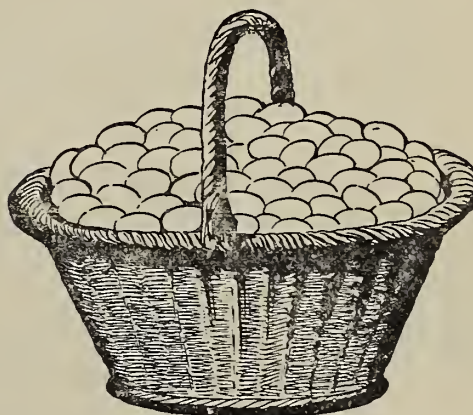
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"More Eggs"

That was a great day in the history of poultry-keeping when a game-keeper discovered that a little Colman's Mustard given to the fowls each day increased the number of eggs. Many leading poultry farmers are now giving Colman's Mustard to their hens, with the result that the number of eggs has rapidly increased. Make the test—comparison tells.

One teaspoonful for every six fowls is the right quantity. Mix it with the dry meal first and then add the water. And be sure it is

Colman's
D.S.F.
Mustard

ss. Durham Castle. One 60-incubator—to Mr. T. E. Butler, Bombay, per ss. Marinora. One 60-incubator—to Mr. S. A. Mason, Colombo, per ss. Sardinia. One 100-incubator—to Mr. P. Neale, Singapore, per ss. Sicilia.

The Molassine Company, Ltd., in addition to their celebrated Molassine Meal, are now placing upon the market Molassine Dog and Puppy Cakes which we think will be appreciated to as great an extent amongst "doggy" people as their original product. It is claimed for Molassine Dog and Puppy Cakes that they will keep dogs in perfect health and eradicate worms, of which all dog owners know possibly too much. Dogs given Molassine cakes regularly have fine coats and are free from smell. Dealing as we do essentially with poultry, two words to poultry owners may be "Molassine Meal" if you want more eggs throughout the winter.

The up-to-date poultry keeper who uses an incubator will find that a foster-mother or brooder is essential for successfully rearing early chickens. It fulfils to all intents and purposes the duties of a hen, in giving the warmth, shelter, and comfort that are

so necessary for the young chicks when they leave the drying box of the incubator. The Westmeria Brooder, which we observe was awarded the Bronze Medal at the Crystal Palace Show, fulfils all these requirements, and anyone wanting a foster-mother should write to Leighton Buzzard for a catalogue.

We have received a box of samples from the Steyne Foods Company, of Steyning, Sussex, containing several of their well-known poultry foods. The Chick feed, which is remarkably free from dust and contains only a very small proportion of grit, is listed at the low figure of 13s. per cwt., while their Fattening Meal is only 10s. per cwt. A complete price list of foods, grit, oyster shell, &c., will be sent free on application.

Messrs. Browne and Lilly, of Reading, have just issued a very attractive catalogue containing a full description of their poultry appliances. The houses are constructed on hygienic principles, great attention being devoted to the important question of ventilation. The "Paragon" Scratching Shed is especially well constructed, being fitted with all the latest improvements.

WHAT HAPPENED AT MANCHESTER SHOW?



The J.M.D. "Sensational" Poultry House at £3 3s. and the J.M.D. "Eye-Opener" Cockerel Pen at £1 6s. 6d. were awarded a Prize Medal each. That wasn't all. They received the highest praise from everybody who examined them. Orders were freely booked, and already we have received repeat orders and recommendation orders. Customers delighted with them. Must be seen to fully compare the quality and convenience. Send for one as a sample. You'll order more. So will your friends. Special lists free.

Have you tried a sample 6-oz. bottle of our J.M.D. "Stamina" Ovary Tonic? Post free, 9d. J.M.D. Roup Mixture, 7d., post free.

J.M.D. LIVE STOCK APPLIANCE Co. (Dept. P.R.), Blackburn.

YOU WANT MORE EGGS Molassine Meal

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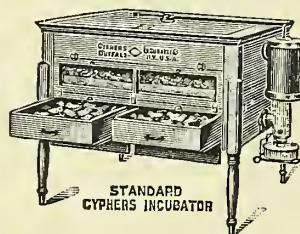
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MORE EGGS, LESS SICKNESS,
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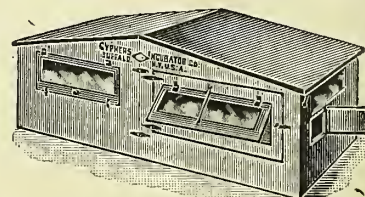


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The Unequalled Chicken Rearers.

Three separate compartments, well ventilated, well lighted, roomy and comfortable for the chickens, convenient, durable, and successful for the operator.



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The Annual Subscription to THE ILLUSTRATED POULTRY RECORD at home and abroad is 8s., including postage, except to Canada, in which case it is 7s.

The Editor will be glad to hear from readers on any Poultry Topics and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in any difficulty regarding the management of their poultry and accordingly no charge for answering such queries is made.

